CHANGE SERVICE REQUESTED

October 5, 2007 Volume 29 Number 40 www.processor.com



Looking After The Servers

Routine Maintenance May Be More Critical Than You Think

by Bruce Gain

PROPER SERVER MAINTENANCE represents a crucial yet often undervalued IT function. Neglecting to look after your data center's servers could eventually spell disaster. But taking the necessary proactive steps to ensure servers remain well-oiled machines also means preventing problems before they happen. Yet, for various reasons, servers are not always looked after like they should be.

Vendors often, for example, play down or ignore the role maintenance will play when selling a new IT product. A high-end SQL or storage server may indeed transform a data center's archival capabilities once installed, but admins can be surprised to later learn how time-consuming and difficult it is to keep the system up and running. With budgets constrained, squeezing in five more



hours of work per month for server maintenance is a challenge for many IT departments.

Nevertheless, servers are not designed to run by themselves all the time. Routinely rebooting, defragging, deleting temporary files, or other such tasks are necessary to ensure your servers remain up and running.

"[Maintenance tasks] are all important to keep a server running in tip-top shape," says Patrick Murphy, services manager for SmartSignal (www.smartsignal.com), an industrial software firm. "Our belief is these activities should be done at least

monthly. My estimate is about five hours per server per month of routine maintenance."

Tailored Approach

Proper server maintenance depends on several variables, including the type of data center infrastructure, applications, and the enterprise's size. No one single protocol or methodology is applicable for all enterprises.

SmartSignal's 80 servers, for example, require their own special type of maintenance, Murphy says. Tasks include ensuring backups are functioning properly, checking server monitoring software configurations, defragging hard drives, removing temporary files, cleaning up user-accessible directories and files,

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Encryption: Not Just For Secret Agents Anymore

New Technologies & Products Aimed At SMEs

by Sandra Kay Miller

ALTHOUGH ENCRYPTION has been used for thousands of years to protect sensitive government and military communications,

only since the introduction of the Data Encryption Standard and public-key cryptography has encryption been publicly available. Encryption has grown to be a standard business tool when it comes to electronic communication and data protection.

When regulatory compliance hit the scene, encryption technologies provided a

electronic data. Products enveloping both were costly, complex, and geared toward larger organizations.

However, today there are a growing number of options available for SMEs that provide a full range of data encryption and protection.

solution to the security conundrum for

enterprises tasked with ensuring the confi-

dentiality of their electronic data. But early

solutions often only addressed one of the

two facets-transmission and storage-of

Plug & Protect

According to Laura DuBois, IDC research director for storage software, "Small and midsized companies face similar data security and protection challenges *Go to Page 10*

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Maintenance. It's an often-neglected area of the data center, but it can reap big rewards in terms of product performance and longevity. We talked with product manufacturers and other experts to find out what needs to be done when.

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■ Eaton's Powerware Enclosure PDUs, or

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ePDUs, are designed for blade servers, switch gear, network, and storage applications in mixed environments. ■ Ensim calls its new Unify Enterprise Edition "comprehensive system management software" for unified communications. ■ EVault's Unified Recovery is a fully integrated platform for physical and virtual environments. ■ NetSupport Limited released NetSupport DNA Helpdesk 2.7, software to help IT professionals manage IT help desk calls. ■ SafeNet's ProtectDrive 8.2 software protects against data breaches. ■ Sans Digital announced the AccuNAS AN104LS, a storage appliance that supports the simultaneous use of NAS and iSCSI storage in a 1U rackmount. ■ SearchInform Technologies released MailSniffer 1.0, which can halt email malicious traffic on a network protocol level.

SoftLayer released its RescueLayer software, which can automatically repair and restore servers after a crash or failure. ■ Super Micro Computer unveiled OfficeBlade, a server designed to be quiet and energy-efficient.

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"Small and midsized companies face similar data security and protection challenges as their larger peers."

-IDC's Laura DuBois

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WINSTED14

PHYSICAL INFRASTRUCTURE

OCTOBER 5, 2007

Monitor Your Data Center For Heat, Humidity & Water

Sensatronics Senturion Helps Protect Your Critical Infrastructure

WITH THE RELIANCE on network applications and IT hardware in today's business environment, data center managers and IT personnel in general are becoming increasingly aware of how important it is to protect the infrastructure that serves as the lifeblood of their organizations.

Using an environmental monitoring solution from a company such as Sensatronics is paramount in protecting your company from a potentially damaging event caused by excessive heat, humidity, water intrusion, or other physical threat.

Newest Tool

Senturion is the newest addition to the Sensatronics family of environmental monitoring solutions. Sensatronics designed the Senturion unit from the ground up to handle all of the monitoring and alerting needed for a data center of any size without the need for additional software.

Most importantly, the Senturion is designed with the IT manager in mind. The Senturion includes only the features you need, making it one of the most affordable options available.

Senturion is a turnkey rack-mountable environmental monitor equipped with integrated temperature/humidity and light level sensors. It's designed to fit a standard 1U rack and has a slightly protruding front

panel for easy access to probe attachments and controls.

The Senturion's small depth (about 4 inches) and light weight (about 2.75 pounds) make installation simple: Just install it in a rack, update a few settings,

The Senturion's internal Web server monitors, records, and alerts users to potential threats to IT assets, and the integrated front panel 1.9-inch color LCD lets users check the status of probes without logging into the Web interface.



and you're up and running. The small depth also means the back of the rack in the same 1U space can be used for other equipment, reducing rack space requirements

Monitor, Record & Alert

An integrated sensor wing monitors the environmental conditions of your equipment, and, if your data center requires additional probes, the Senturion is capable. With RJ12 connections for external probes, the Senturion can accommodate up to eight additional probes for placement throughout the room or facility, up to 1,000 feet away.

Senturion's built-in cable management is designed to make running external probes a cinch; the guides provide order to the cables while creating a clean high-tech look for your equipment.

The front panel contains a visual status indicator, providing users a fast and local method of checking the alarm state of any probes. The unit's front panel lighting will be either blue for normal or flashing red when there is an issue. In addition, should a probe trigger an alarm, there is a local auditory alert incorporated into the front panel that sounds until corrective action has been taken.

Senturion features:

- Designed with the IT manager in mind
- Small size designed for easy installation
- Configurable via the Web interface
- Security via username/password basic authentication
- Upgrade over the Internet via the push of a button in the Web interface

- Direct access to customer support via the support tab of the Web interface
- Internal temperature/humidity/light sensors
- Specially designed packaging ensures that the unit arrives to you in one piece and can be extracted from the package and installed into the rack in minutes

Full Line Of Products

In addition to the new Senturion, Sensatronics also manufactures:

EM1 Environmental Monitor. Capable of monitoring up to four zones; offers a low-cost way to protect rooms.

EM1 Environmental Bundle Pack. Includes an EM1 monitor, a temperature/humidity probe, two 50-foot temperature probes, and a five-license software bundle.

Model E IT Temperature Monitor. Capable of monitoring any temperature environment from -40 degrees to 140 degrees Fahrenheit; comes in either 4- or 16-port versions and is perfect for network and telecom closets.

Model F IT Temperature Monitor. A small device (about half the size of a deck of cards) that plugs into an RS232 serial port and connects to your computer for a convenient and flexible way to track temperature.

Sensatronics Senturion

A turnkey rack-mountable environmental monitor equipped with integrated temperature/humidity and noise level sensors

(800) 633-1033

www.sensatronics.com



NETWORKING & VPN

Остовек 5, 2007

Physical & Virtual Management

KACE's Integrated Appliances Combine Systems Management

VIRTUAL MACHINES, like hardware systems, need systems management, including baremetal image installation, update and refresh, and inventory. As the use of virtualization proliferates, IT admins are searching for effective ways to add management capabilities for these virtual systems.

KACE recently announced support for virtualized environments and other new features on its KBOX 1000 Series Systems Management Appliances and KBOX 2000 Series Systems Deployment Appliances, making them, according to KBOX, the first integrated appliances for managing both virtual and physical environments with a



common set of management capabilities from a single user interface.

According to Marty Kacin, co-founder, president, and CTO of KACE, the KBOX 1000 performs IT endpoint network node life cycle maintenance tasks, including inventory, assessment, audit, remediation, compliance management, and reporting, and the KBOX 2000 supports centralized provisioning and remote system recovery tasks,

including bare-metal installation, booting on PXE (Preboot Execution Environment), native operating system installation, or a KBOX K-image deployment. KBOX allows VM (virtual machine) deployment, discovery/inventory, patching, updates and policy enforcement, and license compliance.

KBOX appliances can manage a variety of guest OSes running on a variety of virtual infrastructures. KBOX appliances provide agentless deployment of physical and virtual machines; KACE also provides a single integrated agent to support physical and virtual environments.

KACE also announced vState Management, a new KBOX feature responding to requests to be able to manage both virtual and physical environments simultaneously.

KACE's new vState Management feature reduces central storage, network bandwidth,

and time needed to reset or reprovision virtual systems by letting IT reset virtual machines to a state defined a K-image file manifest in the KBOX Systems Deployment Appliance Library.

KACE KBOX Family

KBOX 1000: \$9,500, including first 100 nodes KBOX 2000: \$12,900, including first 100 nodes

System management appliances that can handle both physical and virtual environments, for integrated administration

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NEWS



Microsoft Offers Server 2008 **Release Candidate**

THE FIRST RELEASE Candidate for Windows Server 2008, aka RC0, is now available for public download. The Release Candidate is the first version of Server 2008 to incorporate the new Windows Server virtualization technology, codenamed Viridian, which is a thin, hypervisor-based software virtualization layer that runs between the hardware and OS. Microsoft also released the beta of Windows Vista Service Pack 1 to a group of about 12,000 testers. Service Pack 1 isn't expected to include any new features but will combine updates to the OS that are already available along with several as-yetunreleased updates. Final versions of both Server 2008 and Service Pack 1 are expected during the first quarter of next year.

SCO Group Says It May Not Survive

AFTER LOSING ITS COPYRIGHT infringement case against Novell and filing for Chapter 11 bankruptcy protection, SCO Group says it may go under. In a filing with the U.S. Securities and Exchange Commission, SCO says "there is substantial doubt about the company's ability to continue as a going concern." SCO says a prolonged Chapter 11 case may require the company to obtain more financing; if none is available, the "chances of successfully reorganizing our businesses may be jeopardized."

Oracle Sees Increase In Profit

IN PART DUE TO higher-than-expected new software sales, database software maker Oracle reported a 25% increase in its Q1 fiscal profit. During the same period, Oracle saw net income increase to \$840 million, or 16 cents a share, compared to \$670 million, or 13 cents a share, a year ago. The company's revenue grew 26% to \$4.53 billion, exceeding Reuters Estimates' target of \$4.35 billion. Oracle's financial results were boosted by the sale of products added to its lineup after acquiring several companies, including Hyperion Solutions, Stellent, and MetaSolv.

Microsoft Lobbies Against Google/DoubleClick

MICROSOFT, MARKETING and public relations firm Burson-Marsteller, and a number of other companies are part of a group trying to block the merger of Google and DoubleClick. The group, dubbed the Initiative for Competitive Online Marketplaces, or iCOMP, plans to "promote the development of a transparent and competitive online advertising sector," according to its Web site, www.i-comp.org. Google agreed to buy DoubleClick in April for \$3.1 billion; Microsoft says the combination is anticompetitive. So far about 15 companies, in addition to Microsoft and Burson-Marsteller, have signed an online petition encouraging regulators to scrutinize "consolidation in online advertising."

Virtualization Standard In The Works

MICROSOFT, VMWARE, and XenSource, along with server manufacturers Dell, HP, and IBM, are working on a standard to make it easier to deploy virtual appliances and provide portability, integrity, and configurability to existing virtual hard disk formats. The new Open Virtual Machine Format will combine virtual machines with a standards-based XML wrapper, allowing any virtualization platform to install and run the virtual machines, according to the Distributed Management Task Force, which is working on the format as part of its efforts to create standards and initiatives designed to be platformindependent and technology-neutral.

Barracuda Acquires NetContinuum

ALTHOUGH NEITHER COMPANY has disclosed the financial terms of the acquisition, Barracuda Networks announced it purchased NetContinuum, a Web application firewall vendor, in mid-July and has now made the merger public. Barracuda, widely known for its Web filtering devices designed to stop Internet surfers from accessing malicious Web sites, plans to expand into the Web app security field with NetContinuum's Web site protection offerings, upgrading NetContinuum's user interface to market its products under the Barracuda name. With the acquisition, Barracuda also plans to increase its investment in development for Application Delivery Controllers, an area in which NetContinuum has extensive experience.

Microsoft, Novell Open Joint Lab

MICROSOFT AND NOVELL announced the opening of the new Microsoft And Novell Interoperability Lab in Cambridge, Mass. The lab is currently directed by Tom Hanrahan, Microsoft's director of Linux interoperability, and Suzanne Forsberg, Novell's Interoperability Lab manager. The lab employs five test engineers with plans for three more by the end of this year. Engineers are working on a project aimed at ensuring that Microsoft and Novell

products run well together in virtualized environments; other projects involve interoperability with security, file formats, and systems management.

Report: Cyber Crime Going Commercial

IN SYMANTEC'S INTERNET Security Threat Report covering the first six months of this year, the security firm reports a rising trend in the commercialization of cyber crime, with groups of criminals researching, developing, and then marketing malicious software to other criminals. These well-funded international gangs are propelling the increase in the quality and amount of malicious code sold over the Web. The report also details specific monetary values for pieces of stolen information, such as bank account details selling in the underground market for up to \$400, email passwords selling for between \$1 and \$350, and credit card information prices ranging from 50 cents to \$5.

IBM: Malware More Sophisticated

ACCORDING TO A REPORT by IBM's Internet Security Systems X-Force research and development team, there has been an increase in both the volume and sophistication of malware during the first half of this year compared to the same period a year ago. So far, new malware samples identified and analyzed by the team have numbered more than 210,000, which is already more than those observed during all of last year. Trojans account for the largest category of malware at 28%; last year downloaders earned the top spot.

Microsoft Names Top-Paid Executives

ACCORDING TO MICROSOFT, CEO Steve Ballmer is underpaid in comparison to similar U.S. executives; last year he received a 32% pay raise that brought his salary and bonus compensation to \$1.27 million. Ballmer also owns Microsoft stock valued at \$11.7 billion. Ballmer is Microsoft's secondlargest shareholder after Bill Gates, who holds about \$25.1 billion worth of stock. Other top-paid executives at Microsoft include COO Kevin Turner, with a combined compensation of salary, bonus, and stock awards of \$8.45 million, and Kevin Johnson, president of the Platforms and Services Division, with \$7 million in compensation.

TJX Data Breach Settlement Reached

TJX, WHICH OWNS RETAIL BRANDS such as T.J. Maxx and Marshalls, announced a settlement, pending court approval, for customers affected by its data breach. TJX announced last January someone stole personal information on 45 million customers. For those whose personal information may have been compromised, the settlement offers credit monitoring services for three years, identity theft insurance coverage, and a three-day customer appreciation event. Those who had to get new driver's licenses would be reimbursed, and those who had to change bank and credit card information would be given vouchers for TJX stores.

Organization Recommends **Unbundling Windows**

THE GLOBALISATION INSTITUTE, a European think tank that typically takes a hands-off approach to regulation in businesses, has released a report that recommends new computers and operating systems be sold separately in Europe, instead of the PCs already having Microsoft's Windows OS preinstalled on them. The organization is encouraging the European Commission to require the separate sales to give consumers more of a choice in what OS they use. The report argues some consumers would likely choose a less-expensive OS option, but they automatically buy the Windows operating system because it's already on the computer they are purchasing.

Upcoming IT Events

- OCTOBER -

Gartner Symposium/ITxpo

October 7-12 Orlando, Fla. www.gartner.com

. **Business Intelligence** 2.0 Conference

October 16-18 San Diego, Calif. www.sharedinsights.com /events/conferences

> ITEC Chicago

October 17-18 Schaumburg, III. www.goitec.com

. Technology + Learning Conference

> October 17-19 Nashville. Tenn. www.nsba.org Interop

October 22-26 New York, N.Y. www.interop.com/newyork

Data Center Decisions

October 23-24 Chicago, III. www.datacenterdecisions.com

- NOVEMBER -

ITEC Kansas City November 7-8 Overland Park, Kan. www.goitec.com

. ITEC Philadelphia November 14-15 Valley Forge, Pa. www.goitec.com

Gartner Annual Data Center Conference

November 27-30 Las Vegas, Nev. www.gartner.com/it/page.jsp?id =502390&tab=overview

> ITEC Portland November 28-29 Portland, Ore. www.goitec.com

- DECEMBER -

Gartner CIO Summit December 2-4 Amelia Island, Fla. www.gartner.com/it/page.jsp?id =503856&tab=overview

. ITEC Atlanta December 5-6 Atlanta, Ga. www.goitec.com **ITC East** December 5-6 Harrisburg, Pa.

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WATCH THE

prices and trends for 16 major companies in the technology market.

Company	Symbol	Year Ago	Sept 19 \$	Sept 26 \$	% change from previous week
Avaya	AV	\$11.43	\$17.02	\$16.96	▼ 0.35%
BEA Systems	BEAS	\$14.90	\$13.39	\$13.33	▼ 0.45%
Computer Associates	CA	\$23.70	\$25.60	\$25.84	▲ 0.94%
Cisco Systems	CSCO	\$22.98	\$32.09	\$32.98	▲ 2.77%
Dell	DELL	\$23.04	\$27.74	\$27.98	▲ 0.87%
Electronic Data Systems	EDS	\$24.50	\$22.14	\$21.90	▼ 1.08%
Google	GOOG	\$401.44	\$546.85	\$568.14	▲ 3.89%
HP	HPQ	\$37.66	\$49.78	\$50.62	▲ 1.69%
IBM	IBM	\$81.87	\$116.67	\$117.30	▲ 0.54%
Intel	INTC	\$20.44	\$25.68	\$25.91	▲ 0.9%
McAfee	MFE	\$24.46	\$35.09	\$34.59	▼ 1.42%
Microsoft	MSFT	\$27.36	\$28.67	\$29.50	▲ 2.9%
Oracle	ORCL	\$17.66	\$20.84	\$21.72	▲ 4.22%
Red Hat Software	RHT	\$20.59	\$19.90	\$19.89	▼ 0.05%
Sun Microsystems	JAVA	\$5	\$5.81	\$5.62	▼ 3.27%
Symantec	SYMC	\$20.72	\$19.58	\$19.42	▼ 0.82%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

SIX QUICK TIPS

Manage Wireless Networks Correctly To Keep Them Secure

by Drew Robb

As noted in a recent FBI/Computer Security Institute survey, wireless LANs represent a major security threat. Anyone can park on the street and gain access to nearby business wireless networks. If the network is insecure, a stranger can log on and download Social Security numbers, bank account details, and other financial information in seconds. Fortunately, wellmanaged WLANs that use the right security tools and modern wireless architectures have little to worry about. Here are several important tips from the experts.

Use Controller-Based Architectures

Many enterprises are now using controller-based architectures with lightweight APs (access points). According to Paul DeBeasi, a senior analyst at the Burton Group, such controllers provide a network management focal point that simplifies wireless network management by automating and centralizing AP management.

In addition, the controller provides a platform upon which additional network

management applications can be built. One example of such an application is location-based services—that is, being able to know the exact location of every wireless device within the network, as well as where it has been and where it is heading. The primary controller vendors are Cisco Systems (www.cisco.com), Aruba Networks (www.arubanetworks .com), Motorola Networks (www.motoro la.com), Trapeze Networks (www.trapeze networks.com), Meru Networks (www .merunetworks.com), and Colubris Networks (www.colubris.com).

Move To WPA2

A surprising number of enterprises still use the insecure protocols for wireless security, such as WEP (Wired Equivalent Privacy). This protocol proved particularly susceptible to eavesdropping, and hackers exposed it as easily crackable. Bottom line: WEP is insufficient to protect WLANs today from determined attackers.

WPA (Wi-Fi Protected Access) superseded WEP in 2003. It updated security requirements between access points and clients, added 128-bit encryption, and instituted two levels of security. WPA-Enterprise was designed for use with an authentication server, which distributes different security keys to each user. Dynamic key changes and other features defeated all known attacks on WEP. WPA-Personal is a simplified version for home and small office networks that cannot afford the cost and complexity of an authentication server. Instead, each user must know a passphrase of at least eight characters to access the network. The passphrase must also be stored in the Wi-Fi access point.

In June 2004, WPA2 incorporated a new message authentication code that is far more secure than WPA and upgraded to 256-bit AES (Advanced Encryption Standard) encryption.

"Don't use the WEP protocol for wireless security," says DeBeasi. "Enterprises should migrate their networks to WPA2."

Wireless Vigilance

But it isn't enough to just implement WPA2 and then sit back complacently. Wireless security must be managed actively. "If an active security process is not used, then WEP codes and such must be changed periodically," says Mike Jude, an analyst at Nemertes Research. "Active security with some form of authentication is much preferable but more complex to manage."

Greg Murphy, COO and founder of AirWave Wireless (www.airwave.com), concurs. He believes that it is all too common for people to assume that one day in the near future their wireless networks will be set up just right and won't need to change. They may think, for instance, that once they migrate to the latest 802.11n hardware from Vendor Y and complete the ongoing WPA implementation to extend that protocol to all handhelds, they will be all set.

"In the real world, no one ever reaches this state of network nirvana," says Murphy. "Large corporate networks are not static, and they're almost never homogeneous. Thus, IT will always face the challenge of continuing to operate both state-of-the-art and legacy equipment simultaneously."

Be prepared, then, for new wireless technologies to continue to be introduced and more types of devices to become wireless-enabled. As time moves forward, standards may emerge that eliminate complexity and incompatibilities. But regardless of that, hardware vendors will always continue to innovate and differentiate their products.

Further, as companies merge or acquire other companies, separate wireless networks have to be integrated. And as wireless networks grow and mature, the pace of change will only accelerate. "Smart IT organizations recognize this and develop strategic plans to address technology evolution and heterogeneity from the outset," says Murphy. "A vendor-neutral and multiarchitecture wireless network management solution is central to an effective long-term strategy."

Take The User View

Murphy makes an important point about IT implementations that applies to wireless LANs: Think about your end users and the types of problems they are likely to experience and then figure out how your IT staff can help them. After all, from a user perspective, there are a relatively small number of wireless issues: I can't get connected. The network is slow. I keep getting disconnected.

The challenge for IT is that any of these user-reported problems can be caused by literally hundreds of different causes. If the network is slow, for example, it might be

BONUS TIPS

Start small. A common mistake is making implementation too complex. This quickly drives up the overall cost of the implementation and makes troubleshooting more complex. "It's better to focus on high-use locations to test the technology and then gradually extend it into lower-use areas," according to Nemertes Research's Mike Jude.

Get trained. Wireless is changing and improving rapidly. Network managers, therefore, should take an open-minded approach when considering future deployment plans and try to not dwell on the way wireless used to be or the painful experiences they may have had in the past. Burton Group's Paul DeBeasi says, "Network managers should be supported in taking advantage of professional development opportunities."

due to too many users being connected, the use of older and slower devices to connect, one user hogging all the bandwidth, or even interference from a neighbor's Wi-Fi network.

"The key to managing a wireless network and controlling support costs is to provide trained frontline IT support staff that can ask the right questions, access network performance, and quickly diagnose the source of user problems," says Murphy. "If the help desk staff is flying blind, they'll waste an enormous amount of time and money and won't be able to help the users."

BEST RETURN ON INVESTMENT:

Centralized Management

- O In general, an effective centralized wireless management solution provides high wireless return on investment. A wireless management solution can quickly pay for itself by:
- · Automating routine tasks such as configuration and software distribution
- Reducing user support costs by improving network performance and reducing problem resolution time
- Shifting the support burden from costly network engineers to the help desk
- · Improving network performance and reducing
- · Extending the useful life of existing network infrastructure

AirWave Wireless (www.airwave.com), for example, provides this type of software. Proxim (www.proxim.com) and Colubris (www.colubris.com) also provide such management tools.

BEST TIP:

Keep It Simple

O "Keep It Simple, Stupid" (aka KISS) very much applies to a wireless network. Take the example of coverage. Many Wi-Fi networks attempt to achieve 100% coverage. But how many people actually access Wi-Fi in hallways and bathrooms?

"Trying to cover every inch means that you need rather sophisticated site surveys and

coverage maps," says Nemertes Research's Mike Jude. "Just covering work spaces to begin with means that much of that can be avoided."

In addition, if your installation is simple, managing access points becomes easier. You can use self-configuring equipment without the need for IT to have to intervene much to address problems.

NETWORKING & VPN

SEPTEMBER 28, 2007

Geographic WAN Link Balancing

Elfiq Link Load Balancer Lets You Better Manage Traffic & Meet Your Budget

ELFIQ NETWORK'S Link LB (Link Load Balancer) 1500E is the next-generation model of rackmount entry-level link load balancer supporting up to eight WAN links and 150Mbps of WAN throughput. It supports hardware LAN failover and requires less than 25W of power consumption.

The LB-1500E redefines the entry-level rackmount field by providing an unmatched functionality/price/performance ratio and differentiates itself from the competition by operating at the data link network layer (Layer 2 inline/transparent operation) to



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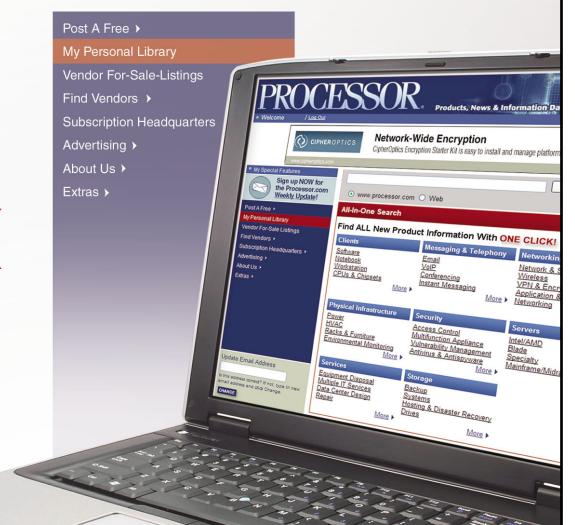
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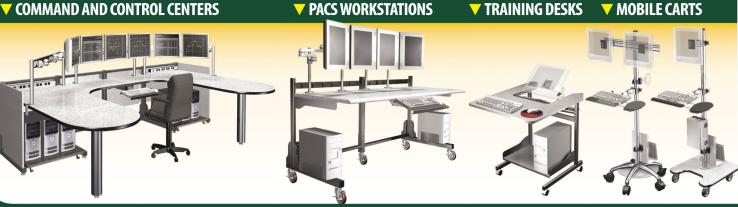
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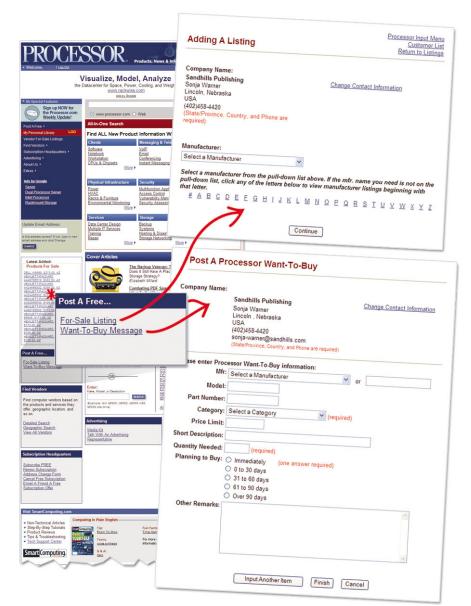
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Guard Against Power & Cooling Issues

Maintenance To Ensure Continuous Operation Can Save Money

by Darrell Dunn

THE INCREASINGLY CRITICAL nature of data centers has businesses looking for new ways to guarantee uninterrupted and efficient operation of the facilities. Some of the simplest methods can also be the most effective, as maintenance of data centers helps ensure effective operation.

Investments in data centers are increasing due to the high cost of real estate in many markets, as well as rising utility rates that are compounded by equipment with higher heat loads at the rack level. The growing cost of data center operation has put a greater emphasis on making sure the equipment in the facilities is properly installed and maintained.

No Time To Spare

A recently published study by technology research company Opengate Data Systems (www.opengatedata.com), which was commissioned by power specialist Active Power (www.activepower.com), found that during a power outage a typical data center (that has adequate power backup measures)

Three Quick Tips

1. Check those filters. One of the simplest maintenance efforts can also be one of the most critical. Businesses should make sure they evaluate and replace air filters for their air-conditioning systems on a monthly basis to save money and stop problems before they begin.

2. Take advantage of the technology you

have. Many servers come with redundant power supplies or dual-source inputs, but some smaller businesses don't always realize how those capabilities can ensure uninterrupted operation, or in some cases the businesses don't take the time to implement the available features.

3. Keep track of what you're putting on the floor. Businesses will often add servers and networking equipment on an as-needed basis and may not keep adequate track of what types of demands the new equipment will place on the existing data center infrastructure. For example, a new rack of servers added in January may have undesirable consequences come July.

running at 5kW per rack will experience an automatic and thermal shutdown within about three minutes. Higher density data centers can experience even more rapid heating and shutdown times.

While a UPS (uninterruptible power supply) can ensure continuous power even during an instance of power failure, cooling systems in a data center are reliant on generator power or utility power coming back online in short periods of time, says Mark Germagian, president of Opengate. "When as much as two to three minutes pass before power is restored to the cooling system, it can have grave consequences on sensitive server equipment," Germagian says

During a data center crisis, companies should ensure that at least the fans in the cooling systems are running on a UPS, says Martin Olsen, director of product management and development for Active Power. "In the event of a problem, you can at least continue to recycle the air through the room, which may buy some important time as longer-term solutions are implemented," Olsen notes.

Active Power has recently introduced the CoolAir system, which during a power outage uses canisters of compressed air to spin a flywheel to generate emergency power.

Keep Watch

Continuous monitoring can guard against loss of equipment and related data and help keep equipment operating at peak efficiency, says Joe Skorjanec, sales manager for Pulizzi Engineering (www.pulizzi.com), a provider of power distribution and remote management products.

Monitoring of data center equipment can be particularly important within businesses and organizations that are using small data centers or server rooms that are not necessarily optimized for operation, Skorjanec says. "If you can ensure you're keeping the temperatures at proper levels, rack-mounted servers are designed to run 24/7 for years without any real maintenance," he notes.

Data center managers can use intelligent power strips in data centers of all sizes to provide a cost-effective and simple method of rack-level power management. They can mount the strips vertically or horizontally to simplify equipment changes and reduce cable clutter while also improving the control of power consumption within specific racks of equipment.

David Gentry, senior vice president of services operations for Lee Technologies (www.leetechnologies.com), a provider of outside contractor to evaluate facilities operations on at least a yearly basis to determine if the existing cooling design is still adequate. In between, businesses should keep a constant check on the cold air that its cooling system supplies.

"You don't want to wait until someone is screaming that it's 100 degrees inside the data center and things are shutting off," Michel says. "Generally, the rooms begin heating up over the course of a night or in a few hours during the day, and if you keep on top of those temperatures, you may be able to forestall any major damage."

Even the largest and most technically savvy businesses can run into cooling



products and services that enable businesses to power, monitor, and maintain their physical infrastructure, says, "Failure is not an option," and preventive and predictive maintenance will reduce risk.

Data center managers should take some regular maintenance steps, Gentry says. They should inspect backup generators to ensure they are properly fueled and periodically run the equipment for short periods to ensure quick startup when needed. They should also test batteries and inspect any belts for wear.

Outside Sources

Companies such as Lee Technologies can provide routine maintenance as part of service packages. "Companies need to decide if they can justify training and compensating someone on staff to do these necessary actions or use an outside service that can provide that level of assurance along with a more comprehensive best practices approach to mission-critical systems," Gentry says.

Clark Michel, vice president of portable air-conditioning equipment specialist Atlas Sales & Rentals (www.atlassales.com), says data center managers should get an

issues in the data center, says Thomas Straughan, western regional supervisor for Spot Coolers (www.spot-coolers.com), a provider of temporary and emergency airconditioning systems.

When any data center begins experiencing power outages or increases in heat loads inside the facility, the IT manager should begin looking for what equipment he can shut down without critical service interruptions and what applications or workload requests he can transfer to a different facility. He should also start opening doors to allow the growing heat to escape.

"Hire a guard to stand there near the open door if you have to, but getting heat out [of] the room and saving the equipment has to be a top priority," Straughan notes.

To guard against heat-related problems, Straughan says businesses should make sure that tracking the installation and usage levels of new equipment is part of regular maintenance checks. "We see businesses that are growing all winter and adding servers right and left," he says. "Then it starts getting hot; they suddenly learn they've over-burdened their data center."



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Looking After The Servers

Continued from Page 1 installing antivirus updates, rebooting servers, and installing necessary bios or software updates, Murphy says.

"I also believe the type and frequency of maintenance depends on the type of applications running on the server and the amount of direct user connectivity. This involves whether users have direct access to the servers to run applications or move files from them," Murphy says.

On a much larger scale, maintenance means something else for The Planet (www.theplanet.com), a server and Web hosting firm that has 48,000 servers in six data centers. "Server maintenance is critical to our business and, more importantly, to our customers," says Britt Lindley, who manages The Planet's Dallas data centers.

"We run our customers' IT infrastructure, so they rely on us to be their remote

Three Quick Tips

- Have a maintenance schedule detailing what has to be done for the next 12 months.
- Ensure that looking after your servers involves proactive steps that will prevent server failures before they happen.
- 3. Verify that the different server administrators know what to do (server maintenance is not always considered a formal skill for many IT department hires).

hands and eyes. Our maintenance schedule is constantly managed and updated to include hardware upgrades or repairs, component replacements, as well as technology refreshes," Lindley says. "All of this must be done in close coordination with our customers so the maintenance is transparent. It has to be convenient, seamless, and quick, and they rely on us to be certain it's done right the first time."

Is In-House Skill Enough?

More often than not, enterprises rely on their in-house admins' expertise for server maintenance. A data center's Microsoft Exchange and SQL server administrators, for example, will often be responsible for the looking-after tasks associated with the systems for which they are responsible.

"For a small enterprise, one should have a network engineer in-house to perform [maintenance tasks] or at a minimum, understand these activities and be able to employee best practices and [relevant] techniques," Murphy says.

A professional can be hired if time constraints do not allow for maintenance, but compliance issues can get in the way, Murphy says. "These servers hold your company's most critical asset: its data," he says. "Giving access to this information to an outsider may contradict some of your security charter or compliance standards."

Whether to seek a third party's services also depends on scalability vs. expertise, Lindley says. "The larger the maintenance issue, the less scalable in-house staff will

be, yet the expertise and know-how will usually be better in-house," Lindley says. "In-house project management of vendors is a great compromise that works well, ensuring that we are appropriately utilizing equipment-specific knowledge in our overall preventative maintenance planning."

Indeed, server maintenance skill sets are often tied to the admin's understanding of the servers he or she is responsible for and are thus part of a typical admin's skill sets.

"There is nothing special about doing server maintenance, and I believe any computer operator has the skill set," Murphy says.

Still, the individual talents and knowhow of admins can come into play. "One important piece that most organizations miss is being able to predict or evaluate server degradation and proper sizing of servers," Murphy says. "This I believe is an art, and I've found few tools that do this well."

Automate The Process

Software solutions are available that help to automate the process. Maintenance utilities, for example, exist within network monitoring software that are geared for SMEs. One such product is WhatsUp from Ipswitch (www.ipswitch.com), which offers active and passive real-time monitoring of servers and the network. The software also has scripted engines built into it that are dedicated to maintenance tasks.

"WhatsUp is a catalyst for much of the maintenance you do," says Ennio Carboni, director of product management, network monitoring products, for Ipswitch. "We built a scripting engine that comes with the product out of the box that allows individuals to run such maintenance tasks as rebooting servers."

Software can thus offload some maintenance tasks from the admin, which can be a boon for understaffed SME IT departments. "Guys and gals don't have the time [for these types of tasks]," Carboni says. "They must instead be very focused on application deployment."

Other software products that help with server maintenance tasks include Solar-Winds' Orion (www.solarwinds.com) and Castle Rock Computing's SNMPc (www.castlerock.com). Both monitoring software packages' utilities that help facilitate server maintenance are geared for SMEs.

Think Outside The Box

Maintaining servers is not just about rebooting, adding software updates, or defragmenting drives. Checking and looking after the state of the physical infrastructure around the systems is also crucial. A failed UPS unit, emergency power generator, fire alarm, or cooling system, for example, can mean big problems for a server's operation. For more information on maintaining power and cooling devices, see "Guard Against Power & Cooling Issues" on page 9.

"Any of these disruptions can cause you to shut down and turn off your entire data center's [servers]," says Michael Petrino, vice president at PTS Data Center Solutions (www.ptsdcs.com), which designs and engineers data center environments. "It is necessary to be proactive to think about how we stop the problem from happening before we go and have to deal with the problem."

Encryption: Not Just For Secret Agents Anymore

Continued from Page 1

as their larger peers but frequently have not implemented a reliable data protection and business continuity solution because of cost and implementation obstacles unique to smaller companies."

To help SMEs overcome encryption obstacles, Unitrends and CipherOptics have both recently introduced easy-to-use software and appliance-based solutions.

Unitrends chose to integrate encryption at the storage and recovery level with its

recently released solution, InCrypt, which is an add-in to the company's existing data protection and rapid recovery solution, the Data Protection Unit, a turnkey appliance for bare-metal and file-level backups.

"What makes it unique is that it is fully integrated into our solution, and it is very affordable for small to medium-sized businesses," explains Cerelle Centeno, marketing director at Unitrends. She points out that despite regulatory compliance driving the need for encryption and data protection,

any organization that is capturing its customers' or employees' personal information is seeking ways to ensure privacy and confidentiality. "We're in a day and age where this is important information that can be hacked into, collected, or obtained by people that shouldn't be touching the data," adds Centeno.

InCrypt provides full AES 256 encryption for both data in flight and at rest with minimal overhead on either the host or network.

Many data center and IT managers are still leery about encrypting archives due to the possibility of not being able to access critical data in the future due to changing technologies or worse, lost decryption keys. However, Unitrends has developed its own key management system that provides a single current key for all encrypted data, offering protection from losing a key and not being able to unlock the data. "As you go through years of putting things in archives, your legacy keys will all be accessible through the new key," says Centeno, "It helps customers overcome the fear of not being able to access their information in the future when encrypting their data."

Network Encryption

Alternately, CipherOptics delivers data protection through an encryption overlay on existing networks, regardless of the topology, size, or type—including VLANs. For affordable and easy deployments in SMEs, CipherOptics offers the CipherEngine Starter Kit composed of the CipherEngine software, a Key Authority Point Server, four network security gateway appliances, and accompanying licenses.

CipherOptics President and CEO Ron Willis points out, "The CipherEngine Starter Kit is the next step in our continued commitment to ensuring customers have the key management functionality they need to deploy a scalable data protection solution as part of an in-depth security strategy."

The power lies in the granular policies and multiple key generation that allows

multiple groups to effectively share encrypted data over unicast, multicast, and broadcast data streams. This is due to CipherOptics' unique Policy and Key Management Architecture, which eliminates the dependency for router-based point-to-point encryption.

CipherEngine separates key management and distribution into two separate logical layers—MAP (Management and Policy Server) and KAP (Key Authority Point). MAP offers centralized control over policy creation, management, and monitoring. Based upon the policies pushed down from MAP, the Key Authority Points then create encryption keys and security associations at the network layer. All policy and key transactions take place over secured TLS (transport layer security) tunnels.

This feature will be welcomed by growing SMEs that can scale their encryption solutions without having to manually reconfigure each router as their organization expands.

Matthew Prough, the system administrator for the police departments of Sun Prairie, Middleton, and Fitchburg, Wisc., deployed CipherOptics, which allowed each city to share access to law enforcement data and securely utilize wireless networks while maintaining encryption standards (FIPS) set by the federal government

"It is a simple solution to an otherwise complex problem. We deployed the entire solution in a matter of hours and found it to be simple to use and transparent to our network and our applications. Cipher-Engine has given us the flexibility to protect our data network-wide without having to change the way we use our network."

For Prough, this means being able to encrypt traffic for law enforcement while sending unencrypted traffic to other public agencies, such as the fire department.

Thanks to emerging technologies and new solutions, SMEs have the option of deploying scalable encryption solutions at either the network or storage level and protecting data while in transit or at rest.

Encryption Appliance Comparison

Company/Product	Features	URL
CipherOptics CipherEngine Starter Kit	Addresses centralized encryption policies; works transparently on any network topology at Layer 2 and Layer 3; is extremely scalable	www.cipheroptics.com
Decru DataFort	Offers full-duplex, multi-Gigabit speed encryption and key management; capable of compartmentalizing data into separate encryption vaults; encrypts data in storage and in transit	www.decru.com
Ingrian DataSecure Platform	Able to facilitate large volumes of highly specialized cryptographic activities on the network; simplifies key management	www.ingrian.com
Nexsan Assureon	Combines advanced encryption with content addressed storage, ILM technology, and other patent-pending security features into a single, fully integrated disk-based storage system	www.nexsan.com
Unitrends InCrypt	Addresses encryption for recovery and storage; protects data at rest and in transit; has minimal impact on network performance	www.unitrends.com

Maintain The Physical Data Center Basics

Experts Instruct How To Take Care Of Flooring, Racks & Furniture

by Christian Perry

MOST DATA CENTER MANAGERS recognize the importance of regular maintenance because without it, it's no secret that equipment can swiftly fail. However, what are not as obvious are the correct methods for maintaining flooring, racks, and furniture. While these components can appear to take care of themselves, it's crucial data center managers give them the same attention as seemingly more sensitive equipment because servers and other expensive devices depend on them to operate as they should.

Hit The Floor

According to Kris Domich, principal consultant for data center and storage solu-

Three Quick Tips

Looking for the best methods to clean your flooring, racks, and furniture? We asked our experts for quick tips that can keep your data center looking and running like new.

- 1. Dust furnishings and fixtures with microfiber cloths. "Microfiber cloths, ideal for use on horizontal and vertical surfaces that are not vacuum-friendly, are effective because of the way the fibers are split. Use them dry to remove dust and launder properly before the next use. In most cases, these cloths can be laundered up to 500 times before being disposed of." — Dennis Moore, director of building services, Bishop Clean Care (www.bishopcleancare.us)
- 2. Keep a log that tracks when maintenance was performed. "This log helps to keep up-to-date with what happened in the data center during each maintenance visit. It also helps to spot trends and prevent major disasters from occurring." — Harry Husted, author of "Learn How to Repair Computers: Get Certified in 15 Weeks"
- 3. Watch for out-of-place furniture. "It is not uncommon for a few chairs, possibly some tables, and shelf units to be in data centers. They should not obstruct aisles." —Dimension Data's (www.dimensiondata.com) Kris Domich

tions at Dimension Data (www.dimension data.com), data center personnel should inspect flooring regularly for visible signs of wear or deformities, and if they find scratched, chipped, or other severely worn panels, they should immediately replace them. Further, staff should inspect subflooring for dust and rust, and

if they find it, remove the dust or rust and detect and eliminate the root cause of its presence.

"It is also advisable to take note of the placement of perforated tiles," Domich says. "As equipment is moved around in the data center, it is important to ensure that the cool air is getting where it needs to, as opposed to being blown at the exhaust side of a rack."

Raised flooring, in particular, can suffer from the damaging effects of zinc whiskers. Jack Burlin, product manager for Information Support Concepts (www .iscdfw.com) notes that if the potential for zinc whiskers exists in a data center, managers should address the problem on a regular basis, and hiring professionals to periodically maintain the tiles might be the best route.

Although zinc whiskers don't exist in all data centers, dust typically does, and its effects can be severe and wide-ranging. "The worst enemy of data processing equipment is dust," says Jeff Bishop, technical advisor for the Institute of Inspection, Cleaning, and Restoration Certification (www.iicrc.org). "When component cooling fans are running, or simply when equipment heats up and creates convection air currents, dust will be drawn through electronic components."

Experts recommend regularly vacuuming the spacing under raised floors because this is a prime location for dust. Keeping this area dust-free will ensure an unimpeded airflow and in turn allow cooling equipment to run as efficiently as possible.

Attack The Racks

Some data center managers might look at racks and never expect to see problems, but that doesn't mean that racks are necessarily maintenance-free. Harry Husted, author of "Learn How to Repair Computers: Get Certified in 15 Weeks," warns that heat can easily accumulate if racks are loaded with too much equipment or if there is not

enough space around the equipment within the racks.

"Inspect the racks and make sure there are only so many pieces of equipment on the rack that allow enough room for the other pieces of equipment to breathe," Husted says. "This is especially true if the data center does not have AC. Also, look for signs of aging of the racks. If you start seeing rust in spots, particularly around nuts and bolts, you better plan for a replacement rack because one day that bolt will give, and down will go the equipment."

Also, Domich recommends inspecting doors to make sure they're not misaligned or not closing properly. He also says that in closed racks, the proper use of blanking panels can ensure proper airflow, while in racks that use stabilizing hardware, data center personnel should regularly inspect the hardware and anchoring system. Finally, it's important to check the power distribution inside racks and make sure that power cabling is properly grounded and isn't under physical stress.

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As equipment is added to racks, cabling can grow to unmanageable proportions, but several companies offer products that can help get cabling under control. For example, Rackmount Solutions (www.rack mountsolutions.net) and Chatsworth Products (www.chatsworth.com) each offer multiple cable management products.

If rack inspection uncovers potential problems with rack stability, it's a good idea to determine a new way to stabilize the rack to prevent tipping or other movement. Rack restraints, such as the ServerTrac Fastening System from WorkSafe Technologies (www.worksafetech.com), can secure sensitive equipment to prevent acci-

dents and serious damage.

Don't Forget Furniture

Although furniture should be as limited as possible within data centers, any pieces that do reside within those walls require regular cleaning and inspection. Husted recommends looking for wet spots or rust on metal areas of furniture, or moist areas on wood, and if data center personnel find any, they should investigate further to find and stop the source of the leak. They should also monitor the general condition of furniture.

"For furniture, like computer tables or LAN stations, check the condition of the surface. If there are plenty of marks, scrapes, or cuts in the furniture, someone is abusing the furniture. Initially, this won't hurt the equipment, but if the situation is not resolved, the abuse could reach the equipment,"

Husted says.

In Or Out?

Experts agree that someone should perform regular maintenance, but they don't always agree on who should perform it. For example, Husted says that if a company has the staff to handle maintenance, it can be accomplished using in-house personnel, with weekly touch-ups and overall monthly maintenance sweeps. However, if staff is already stretched thin or otherwise can't perform the maintenance, he recommends seeking the help of an outside firm. Domich, on the other hand, recommends this route in all cases.

"Without question, a professional should be hired to perform data center maintenance," Domich says. "The professional should have some level of certification for the component he or she is working on."



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Maintaining Storage Infrastructure

Regular Maintenance Helps Ensure Effective Management & Backup

by Ericka Chickowski

As the vessel for an organization's most important asset—its information—the storage infrastructure within any data center is usually a mission-critical part of the IT architecture. As such, it is imperative that data center managers do their best to regularly conduct maintenance activities that ensure the reliability of storage equipment, controllers, and networks.

Starting Off On The Right Foot

As storage arrays and networks grow increasingly complex, it is critical that organizations start their maintenance activities on the right foot by deploying storage controllers and server devices that will be reliable and easy to manage in the first

In addition to the products from the market-dominating usual suspects, a number of smaller players cater to the SME market. For example, Area Data Systems (www.areasys.com) offers a full line of RAID controllers and arrays with activeactive failover, power supply redundancy, and cooling redundancy to limit downtime and improve reliability. Sans Digital (www.sansdigital.com) makes enclosures, controllers, and storage devices designed to make it easy for even the smallest SME to manage and monitor without much

specialized expertise. Both vendors primarily focus on direct storage, but plenty of small vendors also focus on IP-based storage for SMEs, including StoneFly (www.stonefly.com), a wholly owned subsidiary of DNF Storage, and Nexsan Technologies (www.nexsan .com). By using vendors that tailor storage equipment to an organization of your size, you'll reap the benefits of fewer problems to troubleshoot and improved maintenance time of your storage infrastructure.

Finding Problems In Time

Storage devices are typically pretty low-maintenance unless drives are beginning to fail. As such, there are rarely any preventive maintenance activities managers need to schedule on a regular basis. Instead, the real trick is to have proper monitoring and reporting that will caution data center managers as problems occur.

"The easiest way to find out about problems is through email alerts," says Rocky Shrek of Area Data Systems. "Many people put their storage systems at

more than one location for redundancy, and it is very important that they will be notified when storage devices fail or are

As an example, Shrek says his company's storage devices come with email alerts built into the appliances, which can be set say, a RAID configuration, if you lose two drives, then you are down, which is why it is important to look for issues that might have caused the first drive to fail and head them off."

The No. 1 culprit, Graham says, is high temperatures. Some kind of issue with the



at different thresholds. For the most critical systems, managers can be alerted at the slightest hint of performance degradation that might indicate that the drives are on the path to failure. Of course, there will be a lot more false alarms at this threshold, so some managers may just want to know when a single drive fails.

Organizations that want even greater control and visibility into how well drives are performing may also consider using some kind of SRM (storage resource management) tool. These robust tools alert managers to even more issues that may indicate poor performance and drive failure. Of course, these tools are expensive and often complicated to manage. Shrek says this is why many smaller enterprises go the email alert route. "For small businesses who don't have the open management stuff, we think email alerts are the best way to go," he says.

The Root Of An Issue

Once a manager is notified of an issue, then what? Usually, the first thing to do is to verify a failure and to replace anything that needs replacing. Then it is a matter of figuring out what made the drive or equipment fail in the first place. "If there are environmental conditions that cause one drive to fail, it is going to probably cause others to fail, as well," says Jeff Graham, senior product manager for Overland Storage (www.overlandstorage.com). "In, existing cooling infrastructure can wreak havoc on a storage device, and failure is a good indication of that. Another issue that might come up is vibration problems. This isn't as likely as temperature problems, but it can be an issue, he says. Something as minor as a cleaning crew vacuuming around devices and causing them to vibrate may hurt storage devices. A rack so full of drives that the platters are spinning all at once and shaking the rack can also cause excessive vibration.

Outsourcing

If you don't want to worry about storage maintenance and upkeep at all, you might consider outsourcing your storage to a third party. According to a recent poll by TheInfoPro, nearly 20% of Fortune 1000 companies outsource at least some part of their IT storage management tasks.

As a recent IDC report by Robert Gray pointed out, storage outsourcing can especially benefit SMEs that do not have the resources to maintain a storage specialist in-house. Other analysts agree, but they say the key is to selectively decide on storage outsourcing rather than sending all the duties out the door. Stephanie Balaouras of Forrester wrote recently, "Outsourcing storage can relieve the pressures burdening IT departments, but firms must identify the undifferentiated storage tasks suitable for outsourcing and develop criteria for select-

Three Quick Tips

1. Use VTLs to lengthen the life of tape.

Should failures or disaster hit your storage systems and you can't get to them in time, backup systems will save the day. Tape is the most common form of backup technology in the SME, but it can eventually wear out. Many organizations are loath to invest in new tape libraries because of their perception that tape will eventution is one of them, consider using a virtual tape

ally go the way of the dinosaur. If your organizalibrary to lengthen the life of your real tape. A VTL can be placed in between your storage systems and your tape systems as a day-to-day backup method, using tape on a less-regular basis. This not only lengthens the life of tape but

also shortens backup times and performance. 2. Use an active-active array configuration to eliminate a single point of failure. An active-

active storage system uses a battery-powered

mirrored cache to improve availability and safe-

fail. Unlike an active-passive failover system, an

ty of data should the main storage equipment

ing improve performance even when disaster doesn't strike. 3. Free up staff resources to use SRM tools.

active-active setup allows the mirrored storage

to service clients before a failover occurs, help-

Storage resource management tools let busi-

nesses really gain visibility and control over their storage operations, but they aren't easy to operate or maintain. If your organization decides to use these valuable tools, it will also need to be sure to dedicate the manpower to do the job properly.

Andrew Reichman of Forrester Research says, "Set the team up for success by encouraging participation in the purchase process, planning sufficient training for all stakeholders, having a clearly designated primary administrator for the tool, and possibly contracting for some staff augmentation to free up resources to have time to dedicate to the implementation process."





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CLIENTS

■ Digital View released the HE-1400 and HE-1600 COTS LCD controllers for harsh conditions. Digital View is targeting these controllers at LCD manufacturers that are building displays for military and industrial environments. The HE-1400 offers a calculated MTBF above 200,000 hours. The HE-1600 offers a calculated MTBF above 150,000 hours. The RoHS-compliant devices have military specification resin coatings and support temperatures of -40 to +80 degrees Celsius. They have power supplies that offer 12VDC ±25% tolerance and lowmass capacitors. Manufacturers can choose from several accessories, including an audio amplifier, an inverter interface board, an OSD membrane kit, an OSD button board, and an IR remote control. Digital View can also provide customization options for OEMs. The HE-1400 supports LVDS and TTL panels. It supports 4:3 panels up to SXGA resolution and 6:9 panels up to WXGA resolution and has an integrated controller that includes DVI and ARGB inputs. The HE-1600 offers DVI, dual VGA, Composite Video, S-Video, and Component Video in 4:3 and 16:9 formats and has a buffered, multisync interface controller. The controller offers an analog and digital connection to TFT panels up to UXGA. It also supports Digital View's serial port protocol, which lets builders control functions via an RS-232 port.

■ Fujitsu announced the availability of the palm-sized LifeBook U810 mini convertible notebook. Weighing 1.56 pounds with a 5.6-inch LED backlit display, this

notebook can function as a traditional notebook with an ultra-slim QWERTY keyboard or as a handheld Tablet PC with a touchscreen for finger or pen input. The LifeBook U810 notebook incorporates the energy-efficient Ultra Low Power Intel A110 processor and delivers up to 5.5 hours of computing time with a standard 4cell battery. The LifeBook U810 notebook comes with Windows Vista Home Premium, Windows Vista Business, or Windows XP Tablet PC Edition 2005. For security, this notebook has Trusted Platform Module support, two-level BIO lock, and a fingerprint sensor. The Life-Book U810 also features an integrated camera, an SD Card reader, and a CF slot. An optional docking station is available.

■ IBM announced IBM Lotus Symphony, a suite of free software utilities that lets users create and share documents, spreadsheets, and presentations without having to worry about software licensing, royalty fees, or platform incompatibility. The collaboration software consists of three applications: Lotus Symphony Documents, Lotus Symphony Spreadsheets, and Lotus Symphony Presentations. Supported on both Windows and Linux platforms, IBM's Lotus Symphony lets users work with Microsoft Office documents and Open Document Format files. The free application also lets users create documents and output them as PDF files.

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■ Lanier is targeting its latest networkenabled four-in-one digital imaging system at small offices. The AC230n is a black-and-white printer that also offers digital copying, color scanning, and faxing features. The AC230n provides TWAIN

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scanning at resolutions up to 4,800 x 4,800 dpi. The scanner can capture a document in 1.4 seconds. Users have several document distribution choices, including Scan-to-Folder, Scan-to-USB, and Scanto-Email. The printer also includes a SmarThru4 utility that lets users remotely manage scanned files. The printer's faxing feature can scan pages at three seconds per page. It has a 30-number one-touch dial feature, and the speed-dial memory holds another 240 numbers. The printer feature can print 30ppm. The AC230n includes a front-facing USB 2.0 port that lets users save scanned files to flash drives or print documents directly from flash drives. The AC230n has a 550-sheet paper capacity and 50-sheet ADF (automatic document feeder). The printer supports pages up to 8.5 inches wide by 14 inches high, and the control panel supports 16 languages.

. ■ Lenovo has unveiled two desktop PCs, the ThinkCentre M57 and M57p, along with a 22-inch widescreen WUXGA resolution monitor, the ThinkVision L220x Wide. The ThinkCentre M57p includes the latest Intel vPro processor, and the M57 has a quadcore Intel Core 2 Quad processor. Additionally, the ThinkCentre M57p offers Active Management Technology 3.0 from Intel, allowing PC remote management to power a PC when the operating system or hard drive is inoperable or the PC is turned off, and supports the latest WS-MAN and DASH(2) standards. The ThinkVision L220x Wide monitor boasts 178-degree horizontal and vertical wide viewing and 103 pixels-per-inch dot density.

■ Metrologic Instruments has released the MS1890 Focus, an industrial-grade hand-

held area imager. It's designed to provide scanning performance in harsh environments and to withstand 2-meter falls. The MS1890 Focus is an IP54-related omnidirectional imager that accurately implements applications for retail back-of-store, manufacturing, transportation, and logistics. It presents FirstFlash technology, allowing it to perform well in decoding all standard barcodes, including damaged and worn codes and codes wrapped in clear plastic. It also has Code Select technology, offering the imager the ability to capture up to seven barcodes in just one flash and then decode them in any predetermined order. Additionally, the MS1890 Focus includes TotalFreedom, an open-system architecture which gives users the ability to develop value-added custom application modules embedded into the imager instead of the host.

■ Oki Data Americas announced the availability of the C8800 Series digital color printers. With a footprint up to 38% smaller than comparable tabloid printers, the C8800 will reduce the cost, complexity, and space requirements for wide-format printing. Standard features of the C8800 series include color tabloid (11 x 17 inches) and unique banner (11 x 47.25 inches) capability, fast print speeds of 26ppm in color and 32ppm in black and white, HD Color technology, and the ability to print directly from PDF files without the need for source applications. The Series includes three models: C8800n (network capability standard for \$2,399), C8800dn (duplex and network capabilities standard for \$2,689), and C8800dtn (duplex and network capabilities and extra paper tray standard for \$3,079).

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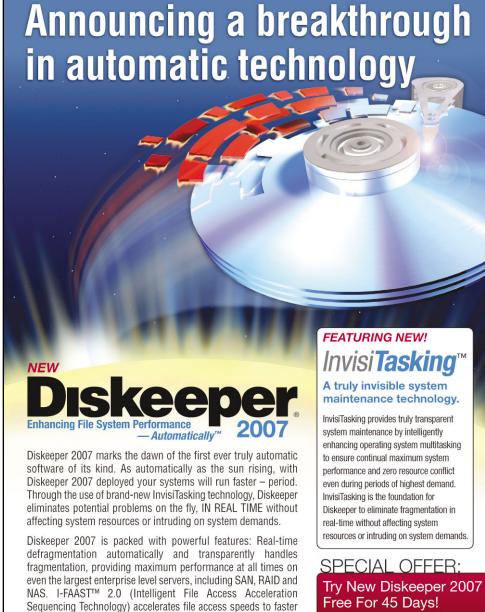
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Product Releases

Continued from Page 15

■ Ricoh launched the Aficio SP 3200SF digital imaging system. The Aficio SP 3200SF is a desktop, network-ready, black-and-white laser printer with digital copying, full-color scanning, faxing, and document distribution features. It can print up to 30ppm. The Aficio SP 3200SF offers full-color TWAIN scanning up to 4,800 x 4,800 dpi. It also has integrated document distribution features such as Scan-to-Email, Scan-to-Folder, and Scan-to-USB. Utilizing SmarThru4, a flexible, iconbased utility, users can easily manage scanned files and access other features remotely. The Aficio SP 3200SF transmits facsimile documents at three seconds per page scanning and offers users 30 One-Touch Dials and 240 Speed Dials for speedier distribution. A 550-sheet paper capacity and 50-Sheet Automatic Document Feeder accompany this device. The Aficio SP 3200SF can handle a wide variety of documents up to 8.5 x 14 inches. The device's front-facing USB 2.0 port lets users print documents from a plugged-in flash drive or save scanned files to a memory stick.

■ Sage Software has announced Sage PFW ERP 5.6, the latest version of its businessmanagement software. The latest version includes improvements to its business management, distribution, and manufacturing modules. Version 5.6 offers interface updates and performance optimizations, including new vendor status, customer status, and order hold features; Caption Hyperlinks; Increased Customer Address Field Sizes; a Find Historical Data option; and new templates. With Caption Hyperlinks, users can quickly access data by navigating links in file maintenance tables. Version 5.6 also provides tools for examining customers' credit histories. The software has a three-tier architecture for better performance and security.

■ Savin has announced the SP 3200SF digital imaging system for small offices. The SP 3200SF is a network-ready monochrome laser printer that also includes digital copying, full-color scanning, faxing, and document distribution. It has a print speed of up to 30ppm and a scanning speed of 1.4 seconds per page. The SP 3200SF supports fullcolor TWAIN scanning at resolutions of up to 4,800 x 4,800 dpi. It also includes features such as Scan-to-Email, Scan-to-Folder, and Scan-to-USB. The SP 3200SF includes 30 One-Touch Dials and 240 Speed Dials. Finally, the printer has a 550-sheet paper capacity and a 50-sheet automatic document feeder. It supports documents up to 8.5 x 14 inches, and it has a front-facing USB port.

■ Xerox announced five multifunction products and printers, including two that make color printing as affordable as black and white. The product rollout includes the Xerox Phaser 8860 color printer and Xerox Phaser 8860MFP color multifunction printer—the first printers to feature the next generation of Xerox's solid ink technology. By increasing the total number of color pages the ink sticks produce, Xerox has drastically reduced the price of color printing. Xerox also launched the Phaser 6180MFP color multifunction printer and the Xerox WorkCentre 7232 and WorkCentre 7242 color multifunction printers. The Xerox Phaser 6180MFP features a 400MHz processor, 384MB of memory, and a 950sheet paper input capacity. Xerox's WorkCentre 7232/7242 are entry-level, color-capable multifunction products. The systems offer two-sided copying and printing and a full range of color controls. Order taking for the WorkCentre 7242 begins next month, and order taking for the 7232 begins in January. The Phaser 6180MFP and Phaser 8860 color printer are available immediately, and the Phaser 8860 MFP will be available next month.

MESSAGING & TELEPHONY

- Ensim released its Unify Enterprise Edition comprehensive system management software for unified communications. Designed for midsized and large organizations, it supports Microsoft Active Directory, Exchange 2003/2007, and mobile applications. The software supplies a role-based Web portal and an extensible Web services API and offers automated provisioning, resource optimization, change management, delegated administration, and more.
- Motorola announced the Motorola Centrellis 2000, a compact, two-slot Advanced-TCA server. The system is intended for smaller-scale and self-contained applications but is also designed to meet NEBS (Network Equipment Building System) requirements and be CP-TA (Communications Platform Trade Association) B.4-capable. The Centrellis 2000 features integrated power and shelf management and a front-to-rear cooling architecture.
- SearchInform Technologies has announced MailSniffer 1.0. This software can halt malicious email traffic on a network protocol level. It indexes all intercepted messages and performs a search and analysis of each. Compared to the beta releases, Version 1.0 is improved due to its new working algorithm, as well as better stability and performance. Email interception is now a separate function from the program's builtin search engine. MailSniffer 1.0 also can preview a recipient's correspondence history, search full text with consideration to stemming, control employees' correspondence, and differentiate between various users' access privileges.

NETWORKING & VPN

- BluePhoenix Solutions is offering a solution for migrating mainframe customers from outdated or unsupported versions of COBOL to COBOL LE (Language Environment). Since IBM withdrew support for these older COBOL versions, organizations need to move toward LE-conforming environments in order to receive support for mission-critical systems. By migrating to LE-conforming environments, users will be able to implement newer technologies and architectures. The BluePhoenix solution is a service that identifies, upgrades, and recompiles non-LE-compliant modules through end-to-end service. Additionally, it analyzes existing source code and executables, providing a report of all modules and code requiring modification.
- A new release of **F5's** FirePass SSL VPN Controller supports so-called Web 2.0 functionality (including AJAX, Javascript, and Flash) and a broad selection of mobile devices (such as the iPhone) and OSes (such as Intel-based Mac OS X and 64-bit Vista). The secure remote access appliance also offers better portal access and application-ready remote access.
- LANDesk Service Desk is now available in version 7.2. The enterprise software is now faster and features various improvements. It's available as a standalone service delivery solution or in conjunction with LANDesk Management Suite and LANDesk Security Suite. New features include a Configuration Management Database for easier setup, better Vista support, computer telephony integration, and a common forms engine.

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- Microsoft has expanded on its business intelligence solutions by introducing Microsoft Office PerformancePoint Server 2007. This application is designed to help organizations increase performance through monitoring, analyzing, and planning their business using one integrated solution. It uses the Microsoft Office interface and consists of SQL Server, adding familiarity. It allows users the ability to build and manage plans, workflows, and rules, while remaining centrally controlled by IT. While suited to meet the needs and requirements of large organizations, it's also affordable enough for small businesses.
- NetSupport Limited released NetSupport DNA Helpdesk 2.7, software to help IT professionals at small to midsized organizations manage IT help desk calls. Version 2.7 includes email integration and active directory support along with an enhanced user interface. DNA Helpdesk 2.7 can integrate with a mail server, so that the server can route—based on preset rules-incoming emails automatically to a help desk operator. Additionally, the escalation process for open issues was modified to take into account help desk working hours and holidays. NetSupport DNA Helpdesk 2.7 also features the ability to automatically update user details from the active directory, as well as the option to store frequently used ticket searches.
- Opsware released Opsware System 7, a suite of automation software that provides application-level control and visibility by automating domains across the data center, including servers, network, storage, and IT processes. Opsware System 7 includes Server Automation System 7, Network Automation System 7, Process Automation System 7, the Application Storage Automation System, Visual Application Manager 7 with cross-tier service visibility, a central OMDB (Operational Management Database), and the Opsware Network realtime service. The systems work together to identify dependencies, automate the management of changes, and assess change impact between the software components of the data center infrastructure. The suite automates process hand-offs between IT groups and other IT systems to automate each change operation across servers, networks, and storage.
- Oracle announced the Oracle Business Process Analysis Suite, software that provides users the ability to model, publish, simulate, and optimize end-to-end business processes. The new version supports the BPMN and BPEL standards, and the Business Process Analysis Suite also features closed-loop support to improve collaboration between business analysts and IT. Business users can create and change business models in the Oracle Business Process Analysis Suite, while IT users can view and modify these processes in parallel using Oracle SOA Suite. IT users can make changes that are made visible to business users as proposals for improvements that can be incorporated into the model. Oracle Business Process Analysis Suite and Oracle SOA Suite support the common Process Blueprint format.
- RadView Software has announced the release of WebLOAD Professional 8.1, which the company says gives enterprises that are using Oracle Forms the power of WebLOAD's low TCO, as well as a multimedia add-on and enhanced SDK. The SDK enables enterprise testers to develop customized extensions for specific environments by writing code or creating new metadata definitions. The release also includes an add-on supporting the RTSP/RTP video-

streaming protocol. Developers and testers can create composite scripts that mix textual, graphic, and streaming media objects.

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- SMC Networks has announced that its SMC Barricade N Draft 11n Gigabit Broadband Router (SMCWGBR14-N) and SMC EZ Connect N Draft 11n Wireless USB 2.0 Adapter (SMCWUSB-N) have received Wi-Fi Certified 802.11n draft 2.0 designations from the Wi-Fi Alliance. The company says it has received certification from the optional Wi-Fi Protected Setup program, which aims to ease setting up and configuring security in Wi-Fi networks. The SMCWGBR14-N provides all-in-one networking for high-speed cable or DSL Internet connections. The SMCWUSB-N provides 802.11n speed and coverage for connecting wirelessly to the network.
- SoftLayer has released RescueLayer, software to automatically repair and restore servers after a crash or failure. Rescue-Layer allows administrators to reboot through RAM-disk Unix, Linux, or Windows PE with improved access to the rescue kernel. The program is designed for optimum access when restoring servers, enabling problems to be resolved quickly. Tools include PassMark tests, OS-specific repair utilities, and antivirus scanning.

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PHYSICAL INFRASTRUCTURE

■ New from **Eaton** are its Powerware Enclosure Power Distribution Units, or ePDUs, for data centers. Designed for blade servers, switchgear, network, and storage applications in mixed environments, the new ePDUs are set up in dual tiers of features and power capacity. The ePDUs also supply management, monitoring, and metering.

SECURITY

- Aiko Solutions released SecuBox 1.3, software that prevents malicious users from stealing data that resides on Windows Mobile-based PDAs and smartphones. SecuBox 1.3 encrypts Word, Excel, and other documents and files with AES 256-bit encryption to prevent people from reading the data after stealing the smartphone. The software also offers DoD5220.22-M compliant data deletion to ensure that your erased data stays that way. The software also reduces stress on your SD card by optimizing the write process. SecuBox supports Windows Mobile 2002/2003/2003 SE/2005, Windows Mobile 5/6 Pocket PC and Smartphone editions, and Windows Smartphone 2002/2003/2003 SE.
- AirTight Networks announced that SpectraGuard Enterprise, a wireless intrusion prevention system, now features WEPGuard software to block WEP cracking attacks and stop intruders from using spoofed identity and compromised WEP keys. With WEPGuard, SpectraGuard Enterprise provides visibility into passive cracking exposure of legacy systems using WEP to help customers accurately assess the risk. SpectraGuard Enterprise also helps retailers meet PCI DSS (Payment Card Industry Data Security Standard) 1.1 security requirements to protect networks and payment card data from wireless threats and risks. WEPGuard provides alerts when weak initialization vectors are detected in the data stream. Once the WEP cracking tools are used, the software blocks the WEP cracking attacks and locates the attacker. If the WEP keys are compromised, the proactive SpectraGuard Enterprise helps stop the intrusion.

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Continued from Page 17

■ Astaro announced the addition of ACR (Astaro Compliance Reporter) to its UTM (unified threat management) security products. ACR uses a questionnaire to assess risk and PCI compliance and works with Astaro's other UTM products to produce a compliance report. According to Astaro, the ACR reduces employee training and offers an automated risk assessment program, which it updates monthly.

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■ Breach Security announced version 3.0 of WebDefend, a firewall application with application defect detection capabilities. WebDefend 3.0 automatically identifies flaws in a Web application's operations such as Web server failures, coding errors, leakage of database structures and source codes, poor session management, and missing or broken links. It creates reports for these problems in order for Web development teams to correct the issues. Web-Defend 3.0 unites attack detection with defect detection, allowing security teams to defend programs from attack and ensure Web applications are operating correctly. New threats prevented by WebDefend 3.0 include comment spam, email injection, nonstandard user session usage, HTTP methods, and security scanner detection.

■ EMC introduced its RSA Card Manager, a software platform designed to organize and manage diverse credentials such as one-time passwords, digital certificates, and usernames and passwords. RSA Card Manager is targeted at midsized to large businesses using RSA Authentication Manager with SecurID two-factor authentication or planned public key infrastructure applications. The RSA Card Manager helps administrators enroll users

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and verify identities; install and secure credentials on devices; manage self-service requests; enable replacements and emergency access; and renew, suspend, and revoke credentials as necessary.

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■ SafeNet introduced ProtectDrive 8.2, software that protects against data breaches while meeting both corporate governance and industry-specific compliance. Protect-Drive 8.2 encrypts hard drives and USB flash drives to protect data in the event of computer theft. Compliant with the PCI DSS, the software integrates with Microsoft's Active Directory and supports ADAM (Active Directory Application Mode).

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■ Secure Elements announced C5 Compliance Platform 3.3, which now includes improved NIST SCAP FISMA reporting, support for extensible asset data models, Web Services interoperability, and IPv6 support. According to Secure Elements, C5 Compliance Platform is the first product to work with NIST SCAP content to help federal government agencies meet the OMB Mandate. It also helps with compliance with NIST ISAP/SCAP initiative for auditing security configurations using OVAL, XCCDF, CPE, CVSS, CCE, and CVE. C5 Compliance Platform 3.3 has NIST SCAPready Sensors for Linux, Apple OS X, and Solaris.

■ Symark Software has announced PowerADvantage, an integrated authentication and configuration product that extends Active Directory's centralized authentication, authorization, account access, policy enforcement, and infrastructure management functionality to Unix and Linux systems. The company says the product will reduce

3 screen surround system

administration costs, improve security, and support compliance efforts through central management of user IDs, authentication, security policies, and automatic deployment of configuration settings. Symark says PowerADvantage inserts an agent on Unix and Linux machines to communicate with Active Directory's domain controllers. During installation, the Unix/Linux host joins the domain, and the host routes authentication requests through PowerADvantage. Features include cross-platform unified logins, centralized storage, integration with Symark's PowerBroker, and automated configuration settings deployment.

SERVERS

■ Supermicro has unveiled OfficeBlade, a server designed to be quiet and energy-efficient. Intended for departmental computing and personal supercomputing, the OfficeBlade features 10 DP blades with quad-core Xeon processors, a Gigabit Ethernet switch, and an efficient power supply. OfficeBlade is part of Supermicro's new line of servers based on Intel Xeon and Core 2 processors.

STORAGE

■ ATTO Technology announced version 3.0 of its Xtend SAN iSCSI Initiator for Mac OS X. The Xtend SAN software allows Macintosh computers to use the iSCSI storage networking protocol so that Mac users can interoperably work with iSCSI applications, such as collaborative digital video/ audio workflows, laptop connectivity to SANs, and remote backups. Version 3.0 also includes features for Challenge-Handshake Authentication Protocol support, Internet Storage Name Service support, and login

redirect, which lets the Xtend SAN software redirect users to their intended targets in situations where the targets may not be available at the expected address.

■ EVault says that its new Unified Recovery is a fully integrated platform for physical and virtual environments. It supports VMware and Microsoft SharePoint and incorporates InfoStage 6 technology. EVault Unified Recovery supports replication and deduplication, too, and is available as SaaS or through licensing or managed service delivery.

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■ FalconStor Software launched the certified FalconStor Continuous Data Protection Virtual Appliance for VMware Virtual Infrastructure. Designed for Intel's quad-core Xeon processor-based Intel Storage Server SSR212MC2, the offering delivers continuous availability for mission-critical data, files, and systems in the event of hardware or software failures, whether the failure occurred on a physical or virtual machine.

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■ Iomega launched several new NAS offerings designed for small to midsized enterprises. The Iomega StorCenter Pro NAS 200r 1TB Server and StorCenter Pro NAS 200r 1TB Server with Print Serving capability are four-drive models built for the data center. These two offerings support key Microsoft file services and retail for \$1,899 and \$2,499, respectively. Iomega's desktop NAS offering, the StorCenter Pro NAS 150d 3TB Server, provides users with additional network storage with Active Directory support and is available for \$1,699. Each server includes five client licenses for EMC Retrospect Express software, which provides automated data protection.

.



■ LaCie has announced its Little Disk family of storage devices, which incorporates a thin, lightweight form factor with features ideal for on-the-go mobility. The 1.8-inch LaCie Little Disk drives offer storage capacities of 30GB or 60GB, and the 2.5inch models offer storage capacities ranging from 80 to 250GB. The LaCie Little Disk is driver-free and preformatted for one-step installation across all platforms. To connect the drive, you can use the integrated, extractable USB cable or, in the case of the 2.5-inch combo drive, one of two FireWire ports. The drives come with backup and synchronization software, and for added security, Windows users can protect their data with AES 128-bit encryption.

■ Pivot3 and Petards have announced plans to bring high-definition video storage products to the physical security market in an effort to simplify the deployment of large-scale video security systems for integrators and resellers. The companies have jointly tested their products' field integration and unified support path, and both companies will provide joint training and customer support. Pivot3 has already demonstrated RAIGE (RAID Across Independent Gigabit Ethernet), a high-definition storage product optimized for large video-surveillance applications. Pivot3 says RAIGE reduces storage infrastructure costs by up to 50% while increasing scalability, performance, and data availability. Petards has demonstrated Universal Video Management System, a next-gen digital recording system.

■ Sans Digital has announced the Accu-NAS AN104LS, a storage appliance that supports the simultaneous use of NAS and iSCSI storage in a 1U rackmount. This latest model supports RAID 5 and does not require any additional hardware for IP storage. The AN104LS features an Intel Celeron D processor, and a Pentium Dual Core option is also available. The appliance has an installation wizard, Web-based management tools, and dual 10/100/1000. It also includes iSCSI target support for server-side iSCSI applications, iSCSI initiator support, NAS-to-NAS folder replication, scheduled and on-demand volume snapshots, and local tape backup support.

■ TeraCloud has announced TSF Client Scheduler, aimed at increasing storage productivity by automating SRM report scheduling, printing, and distribution for the company's TSF Professional and Lite product lines. Scheduler will give administrators the opportunity to automate routing reporting tasks and lessen research time. Additionally, Scheduler can blend disparate reports, graphs, and text from distributed and mainframe environments into one customizable report. Other key features include automatic, full-featured scheduling of any generated report; reports with historical and trending capabilities; and results emailed to internal and external addresses.

■ Verari Systems has released a bladebased server and storage system, the SB5255 DataServer. The device features two Intel 5300 quad-core processors and high storage density. Aimed at handling Web 2.0, the SB5255 DataServer is platform-independent and has up to 16GB of memory and 24TB of RAID storage capacity. Its open architecture allows the SB5255 DataServer to be a platform for opensource NAS and iSCSI storage.

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OPINIONS

INFO-TECH • INSIGHT

Lack Of Performance Metrics Inhibits Efficient Purchasing

The purchaser of a car can easily compare options. As a result, the buyer can spend as little as possible to get the capabilities needed (even though many abandon reason). The same ability to compare alternatives should be available to IT managers making storage, server, or PC decisions.

Unfortunately, those trying to compare hardware based on performance, reliability, or quality find it difficult to collect real data on which to base an informed decision. The computer industry has failed to develop standard metrics or benchmarks that would allow easy direct product comparisons. Furthermore, vendors rarely provide information that would allow prospective purchasers to compare even products in their own lineups.

IT Doesn't Just Care About Price

Performance or reliability metrics wouldn't matter if they weren't on IT's radar, but they are. A recent Info-Tech survey probed the primary and secondary selection criteria for storage and server purchases. While 33% of the storage buyers and 28% of the server buyers identified price as a criterion, 18% identified reliability as important for both storage and servers, and 17% identified performance as guiding their decision.

Prospective buyers should be able to get relevant information from vendors or from trusted third parties. However, in most cases, they can't. 71% of survey respondents identified peers and colleagues as their primary source of information for vendor selection.

How accurate can such data be? Less than 10% based their decisions on information from the vendors, who should have available extensive test and historical data. There is clearly a significant information gap.

Inadequate information leads to excessive spending. An IT manager is responsible for selecting a storage or server product, has

done the homework, and has identified availability and performance targets for the product. There are many solutions available with different performance-enhancing features at various price levels. However, none of the vendors has provided availability and performance data for their proposed solutions that the manager can match to specifications. The manager cannot identify the least expensive

solution that will do the job so will likely reduce risk by selecting a familiar brand and a product choice that is as good as the enterprise can afford. The recommended product will be more expensive than it needs to be, and the enterprise will lose an opportunity to reduce its costs.

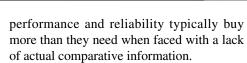
Buyers seeking low cost are also poorly served. Even buyers who are primarily costsensitive suffer because there are insufficient standard metrics. The TCO is as important a consideration as the initial price. Consider the relative energy efficiency of various products. The cost of the power that it takes to run the equipment and to cool it can equal 15% of the equipment cost. Without any easy way to compare relative energy consumption, buyers will disregard any material energy cost differences among competitors. A product chosen because it appears to be the cheapest may not be.

The vendors are not motivated to change. It is not in the vendors' interest to adopt standardized performance metrics. First, a consistent basis of comparison will favor those products that score well on the benchmark. Secondly, buyers concerned about

ANDY WOYZBUN

Andy Woyzbun has more than 35 years of experience in extending and supporting IT in government, consulting, computer services, financial services, and telecommunications.

Before joining Info-Tech as lead analyst, Woyzbun spent more than 10 years as CIO with several organizations. Woyzbun has an engineering degree and masters degrees in computer science and in business administration.



Customer (and government) pressure can drive action. It takes strong pressure on suppliers before they adopt standard metrics, and it takes a strong third party to establish and get agreement on common methods of measurement. But there are signs of change.

Because energy conservation has become a major concern for governments and customers, the computer industry and legislators are working toward developing a computer equipment equivalent to the U.S. ENERGY-guide or the Canadian EnerGuide, implemented for the home appliance industry. When the process is complete, buyers will be able to compare the relative energy efficiency of various products. But progress is slow.

On a broader scale, the SPEC (Standard Performance Evaluation Corp.), a not-for-profit corporation with a number of hardware vendors as members, is developing standard metrics for some aspects of computer performance. Unfortunately, its current focus is on specialized equipment and does not yet address general server and storage

performance. With increased demand for benchmarks and consistent performance and reliability data, vendors will move forward.

While You Wait

The smart hardware choice is the lowest-cost equipment that meets the performance, quality, and reliability objectives of a service. Establish performance targets before searching for the right product. Customers who

demonstrate that they are serious about performance are more likely to get information. Ask vendors for actual performance and reliability measurements, including comparisons among the various products each offers. Let vendors know that you need and will use their data. Eliminate vendors who are data poor. Without customer pressure, vendors will not improve the quality of performance information. Hold their feet to the fire.

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BOOK REVIEW

Practical Lessons Learned & Imparted

Useful Advice From "The Art Of Project Management"

 $by\ Elizabeth\ Millard$

"My FAVORITE WORD in the English language is how," writes Scott Berkun in his helpful, pared-down book on project management, "The Art of Project Management." "I'm filled with questions that involve this small but powerful little word. And most of the answers I find center on how people apply their own intelligence and wisdom, rather than their knowledge of specific technologies or theories."

Berkun is an able guide for programmers, managers, product designers, and anyone else who has had to take on the nuances of project management. In asking the "how"—such as "How will you do this?" or "How does this work?"—he shows that project management isn't some voodoo science or even the result of an outside consultant or author, but instead the combination of skills, people, attitudes, and tactics.

Real-Life Experience

For the author, project management hasn't been a purely intellectual exercise or a basis for theory; he's actually been in the trenches, and they're fairly admirable trenches to have dug. As a usability engineer at Microsoft in the mid-1990s, Berkun worked on Microsoft Office and Visual Basic before becoming program manager on Internet Explorer and then lead program manager on the Windows

and MSN development

Although Berkun's experience gives him the clout to write the book, it's his style and presentation that make it worth reading. Eschewing any business speak or technical jargon, he lays out the basics of project management in a way that will allow anyone, from software engineer to new intern, to understand the concepts.

"Project management and software development are not sacred arts," he states, with refreshing simplicity. "Any modern engineering work is one new entry in the long history of making things. The technologies and skills may change, but many of the core challenges that make engineering difficult remain."

In other words, many projects and techniques benefit from understanding the history of project management as an idea and using advances that have come before. Berkun is also honest about the challenges that arise

in any project, noting that it's best to take a simple approach but that "simple doesn't mean easy."

Practical Setup

Project

Management

The Art Of

Project Management

Author: Scott Berkun

Publisher: O'Reilly

Price: \$39.95

O'REILLY'

Berkun breaks the book into three parts—plans, skills, and management—and delves into tactics for each. For example, in the skills section he not only details how to write good specifications but also gives advice on common communication problems such as assumption, not listening, and blame.

Even those who aren't planning any project management would do well to read the management

KEY CONCEPTS

- Ideas have their own momentum. It will take longer to rein in creative work than you expect.
- Create an open-issues list to track questions that need to be resolved before specifications can be completed.
- How planning is done is often determined by who has what authority. Requirements, design, and budget are the three kinds of project authority that impact planning.
- Problem statements and scenarios are a simple way to define and communicate requirements. They are easily converted into design ideas without losing clarity about what's important and what isn't.
- There are several frameworks for how people communicate with each other. Project managers should be familiar with them so they can diagnose and resolve communication breakdowns.
- No matter what you do, things will go wrong. If you can stay calm and break problems down into pieces, you can handle many difficult situations.
- You should expect some common situations, including oversights, resource shortages, low quality, direction changes, being forced to do stupid things, and threats of mutiny.

section because it first covers the importance of building trust and then delves into the nuances of power. Much more than just a book on project management, Berkun's work is a guidebook on an array of management-related topics that can benefit any reader who's also looking to answer those elusive "how" questions.

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PRODUCT OF THE WEEK

Balancing Act

A10's AX Series 2000 Addresses Load Balancing & More At An Affordable Price

by Elizabeth Millard

LOAD BALANCERS ARE BEING ASKED to do more than ever before, believes Shawn Nunley, director of product marketing at A10 Networks (www.a10networks.com). More and more network traffic is being handled by these aggregation points, and a company can only do so much processing as data amounts increase.

To address the need, A10 has introduced the AX Series 2000, which acts as an application acceleration switch for its AX Series, a server load balancer that's based on an architecture created by the vendor.

The AX Series 2000 is a 2U appliance designed for enterprise data centers and server farms. It has two CPUs, 2GB of memory, eight Gigabit over copper ports, two Gigabit small-form factor pluggable fiber ports, and an 80GB hard drive.

The switches have a price and performance advantage for the application delivery controller and server load balancing markets, notes Lee Chen, president and CEO of A10, adding that any enterprise conducting business over the Internet can leverage the model to make sure their applications and servers are performing efficiently and correctly.

Feature Rich

"The space for load balancing is pretty mature and crowded, so we had to have something very differentiated from the competition," says Nunley. "We have a box that can compete with F5, NetScaler, and others but with lower price and easier installation, as well as a number of features."

A10 Networks AX Series 2000

Description: Server load balancer appliance designed for data centers and server farms.

Interesting fact: Also in the product family is the AX Series 2100, which sports four CPUs, 2GB of memory, eight Gigabit over copper ports, four Gigabit small form-factor pluggable fiber ports, and dual 80GB Raid 1 drives.

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Any company running applications on the Internet will need some form of load balancing, he notes, in order to scale the applications effectively.

The AX Series 2000 architecture is A10's ACOS (Advanced Core Operating System), designed to leverage modern system architectures. It's used to accelerate and optimize applications, including voice, video, and data, and is tuned for multiple CPUs with multiple cores, supports IPv4 and IPv6, and reduces HTTP bandwidth requirements. It also uses a Rule scripting language for flexible traffic management and features SSL and Layer 4-7 accelera-



tion. Nunley notes that overall, user application response times are improved, and server farm capacity becomes scalable with the AX Series 2000.

The AX Series can perform high-speed parallel processing without slowing down to distribute or copy packets across multiple CPUs, according to Jon Oltsik, senior analyst at research firm Enterprise Strategy Group. He notes that with the introduction of the AX 2000, as well as larger-scale AX 2100 (see sidebar), A10 is offering data centers an alternative to existing products offered for application acceleration and server load balancing.

The ACOS is distinctive in the industry, Nunley says. Built by A10 engineers, who have high-performance and supercomputing expertise, it's the distinguishing technology that makes the AX Series able to compete with much bigger vendors.

The architecture scales performance across multiple decoupled CPUs and specialized programmable ASICs in a linear fashion, which gives scalable performance, even when all the features are turned on. This is achieved through more proprietary technology, which handles high-performance switching, routing, and SSL acceleration.

Nunley notes that many vendors have made products that are based on legacy architecture, which sometimes cannot fully

address the scale of Internet traffic and security requirements.

Second- or third-generation systems are sometimes not as efficient for simple load balancing. With more companies moving their single-CPU software to multi-CPU application

acceleration systems, they crave the speed that's needed after such a transition and may not get it with some products that are currently in the marketplace.



The AX Series 2000, A10's server load balancer and application acceleration switch, is based on a vendor-designed architecture and built to be affordable.

Strong Player

"A10 is putting a new hardware spin on an existing application acceleration market," says Oltsik. "There are data center accelerator and networking alternatives, but you'd typically need several boxes to add up to the functionality that A10 has."

The company, which was founded in 2004 to develop networking and security products, has a very experienced hardware team and a strong reputation. Oltsik notes, "They've been working hard on making a passively parallel box and adding this kind of acceleration functionality at the hardware level while still providing policybased management functionality so people can customize it as needed."

A10 has some high-profile competition in the form of Cisco (www.cisco.com) and F5 Networks (www.f5.com), notes Cindy Borovick, director of the data center networks research division at IDC. "Those two firms have been neck-and-neck in terms of market share," she says. "What A10 has done is taken a different approach."

The company has focused more strongly on addressing scalability and functionality

and offering an attractive price point,

Borovick adds. "You get high performance at a good price, and that would be very compelling for an SME in particular," she says.

The price for the AX 2000 is \$17,000, accord-

ing to Nunley, and that doesn't change according to features or number of users. With some companies, finding out the cost is usually answered at first with, "Well, it depends on some factors," he notes. But A10 believes in the flat-rate approach, as well as turning on all the features from the start.

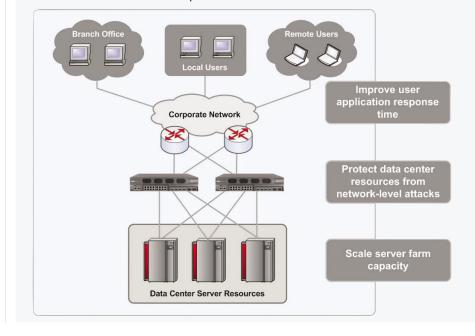
"We don't nickel-and-dime our customers," he says. "The box comes with every feature enabled because that makes it easier for SMEs to deal with."

Although SMEs will likely not use every single feature or push the appliance to the edge of capacity, customers appreciate not having to worry about heavy traffic and having flexibility and scalability, Nunley adds. And the hardware team is already working on making the product more advanced.

"As our technology matures, the boxes are just going to become stronger," he says. "There are people that have 8-core CPUs coming out, and we want our box to scale when those are available."

AX Series Deployment Scenario

As this diagram shows, the AX Series appliances from A10 Networks can manage traffic from a number of different points.





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PRODUCTS AT WORK

Keeping Your Cool In The Data Center

Atlas Sales & Rentals Uses MovinCool To Beat The Heat

by Chris A. MacKinnon

OWNING A VEHICLE used to be a luxury. But these days, having a vehicle is a necessity. What does your car do when it overheats? The answer: nothing. We don't realize how much we take our vehicle for granted until it stops working. The same can be said for the equipment that keeps our data centers humming. If they overheat, they shut down. If this happens, we lose time, productivity, and return on investment. And the small to midsized enterprise is no exception. Being concerned about temperature control in the enterprise is a reality and one that isn't going away, at least for a while yet. But Russ Hiroto, principal of Atlas Sales & Rentals (www.atlas sales.com), says his company found a great way to keep things cool in the meantime.

Keeping It Cool

Hiroto says it all started when Atlas Sales & Rentals moved its office into a new complex and built a separate server room. Hiroto says it was a pretty small footprint, so he wanted to save as much floor room as possible, and that's when he started looking at the CM12, which is an air cooling solution MovinCool (www.movincool.com) makes. Hiroto says Atlas Sales & Rentals chose MovinCool's product because of the many benefits that it offers to the SME.

Atlas Sales & Rentals was trying to solve a major heating problem when it purchased the MovinCool solution. Hiroto says, "We constructed our own server room, and we needed a supplemental system to our central air for our extra computer cooling. The equipment in there emits a great deal of heat. So we were trying to prevent our

servers from overheating and worse, shutting down." Hiroto says he wasn't using any other solution before the CM12 because his situation was new (his company had just moved to a new location). He says, "Although we used portable units in our other location for spot cooling, we did not need a full cooling solution; our old location did not require a dedicated server

But Atlas Sales & Rentals is a growing company and needed to expand its operations. Hiroto notes, "Our network has 15 people at our corporate headquarters, and we have 15 branch offices throughout the U.S." He says his company is already at the point of having to look at having the CM12 installed at the other 15 branch offices.

Like No Other

In Hiroto's opinion, nothing came close to MovinCool's solution to Atlas Sales & Rentals' heating problem. He says, "We considered a couple other ceiling cooling lines. We looked at a few specific ceilingmounted models, but we were pretty much sold on the reliability of the MovinCool solution as a whole line. We made our decision because the solution is economical and, I would say, more fairly priced than the other ceiling unit name brands." He says the company looked at products from larger manufacturers but says, "like anything else, you are paying for the name."

So why, exactly, did Atlas Sales & Rentals choose this specific MovinCool product? Hiroto says it all comes down to reliability. He notes, "Having been in business for 20 years, I looked for reliability as the biggest factor, but also reputation. It's a given that pricing always comes into play, but it's not the most important aspect of the deal. MovinCool's previous lines were also very reliable, and the company had a great reputation."

But Hiroto says it doesn't stop there. "Besides reliability," he says, "it's a small package. However, when you are up in the ceiling, it's not that key in terms of space, but the height does matter. If you have a limited amount of space between floors, this is the perfect situation. It works well because it's a flatter design and takes up less space (measuring 35 inches wide by 23 inches deep by 15 inches high); plus it's

not overly heavy, big, or cumbersome.

than planned. It's almost a fairy-tale story. It's been one year running, and it's still working excellently. We've had no regrets at all about buying the product, and it has solved the computer heating problem."

Page 25

Temperature Is Key

Besides the reliability of the computers themselves, Hiroto says temperature control (or maintaining a steady temperature) is important to keep things running properly in his server room. He says, "Everyone knows what kind of damage heat does. Without the reliability of the computers, our company would have to shut down, as there is so much riding on our system. Making sure they don't overheat is vital."

MovinCool's CM12 has some interesting features worth noting. For example, the unit comes with built-in warning signals and audible alarms if the condensation builds up to an overflow level. The unit can also be controlled by most off-the-shelf thermostats and can connect to a building control system. (It also works with fire alarm controls for safety shutoff.) The CM12 also comes with built-in mounting

> brackets that are designed for off-the-shelf mounting hardware. It is equipped with 10-inch flanges, each with a 2.7-inch flange depth, which makes installation easier.

The CM12 has a cooling capacity of 10,500 BTUs per hour and is suitable for spaces in the 450 square feet range. The unit also has an operating range of 60 to 95 degrees Fahrenheit (about 16 to 35 degrees Celsius) on the evaporator and 60 to 113 F (about 16 to 45 C) on the condenser. The CM12's total power consump-

Hiroto says when all is said and done, the CM12 is cost-effective, doesn't use any floor space, and has provided Atlas Sales & Rentals with the ultimate, reliable cooling solution for its cramped server room.

tion is only 1.23kW.

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Since there was no floor space to place an air conditioner, we needed a cooling solution from above, in the drop ceiling space."

As far as the implementation is concerned, Hiroto says installing MovinCool's CM12 was a snap. He says, "Installation was quite easy; our contractor came in one Saturday, popped a few tiles, set up a few brackets, put the drain line in, and he was done in about three hours. There are four mounting brackets and built-in flanges that make the installation a breeze. Our contractor said it was a snap (and he charges by the hour). The CM12 has been running continuously for 24 hours a day, seven days a week, for about one year. We've had no problems at all. And we've needed no service whatsoever."

Hiroto says MovinCool's solution is not a very detailed or intricate design. He explains, "The CM12 is essentially one supply duct in and one return duct out. You can even move it to another site if you want to (with next to no effort). So there's very little infrastructure impact. It does exactly what it's supposed to-keep the server room cold. It's actually too cold in there, but that is a good problem to have."

So has everything worked as planned? Hiroto says, "The CM12 has worked better

MovinCool CM12

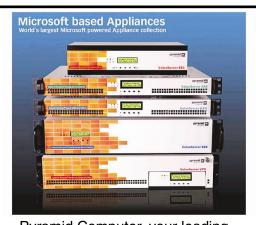
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"It does exactly what it's supposed to-keep the server room cold. It's actually too cold in there, but that is a good problem to have," says Atlas Sales & Rentals' (www.atlas sales.com) Russ Hiroto.

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"The CM12 has worked better than planned. It's almost a fairy-tale story. It's been one year running, and it's still working excellently."

- Atlas Sales & Rentals' Russ Hiroto



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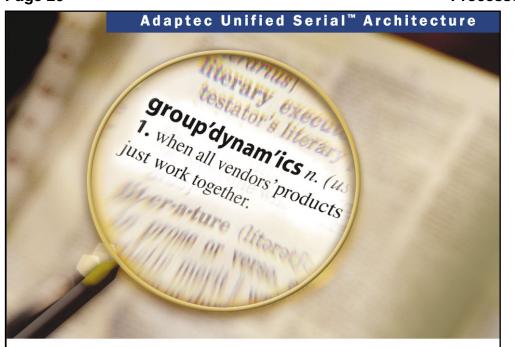




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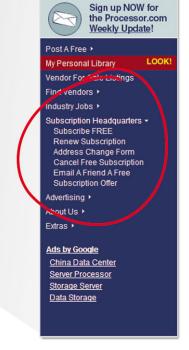
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Botnets & The SME

What Every SME Should Know About The Threat

by Bill Hayes, CISSP

BOTNETS ARE THE WORKHORSES of cyber crime. These parasites lie dormant on compromised computers awaiting commands to reproduce themselves, send get-rich-quick spam to the gullible, and launch DDoS (distributed denial-of-service) attacks.

Individual compromised computers are called "bots," and all bots that are under the same control are called a "botnet." The size of botnets is a matter of guesswork by researchers, but some believe they range in size from a few thousand to millions of compromised computers.

How Big Is Big?

Some researchers believe the new highwater mark of 10 million bots in a single botnet may have been reached this summer by those behind the Storm Worm virus. University of Auckland computer science professor Peter Gutmann claims if this is true, that botnet has more computing power that the world's top 10 super computers.

"I think that's one of the scariest aspects of this—to have such a vast amount of computing power at the disposal of unknown persons, and we don't even know what they plan to do with it," Gutmann says.

Researchers at Symantec (www.symantec .com) believe that a botnet of 10 million nodes could happen, but the company hasn't seen anything that big yet. "There are large numbers of nodes involved in bots today, but only very few have moved past the 1 million

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mark," says Dave Cole, director of Symantec Security Response.

Who & How Much

Andre DiMino, director of The Shadowserver Foundation (www.shadowserver.org), analyzes and reports botnet activity. "Initially starting as a script-kiddie activity, botnets are now primarily run and managed by organized crime and sophisticated networks of criminal enterprises," he says.

Bot herders are "equal opportunity employers," claims Trend Micro (us.trendmicro .com) network architect Paul Ferguson. "For the most part, the perpetrators of these crimes don't really care whose computers get enlisted in their endeavors," he says.

According to Cole, worldwide arrests during the past 24 months have shown the apprehended bot herders to be mainly young men in their late teens or 20s with moderate technical skills. Those arrested came from the United States, the Netherlands, China, the UK, and Vietnam.

DiMino says there is significant money in the use, sale, and rental of botnets: "Typically it's been about \$1 to \$3 per drone for the rental of a decent-sized net for a single event." Dave Marcus of McAfee Avert Labs (www.mcafee.com) says about 80% of all spam now comes from botnets. "Many botmasters have also used their bots to install spyware and adware as a way to generate revenue," he states. "Identity theft, spam runs, phishing runs, etc. all have their connections with botnets."

Gadi Evron of Beyond Security (www .beyondsecurity.com) estimates criminals can garner \$30,000 a day by offenses such as click fraud or hundreds of millions a year

though phishing schemes and credit card fraud. Cole places the lone bot herder's income at up to tens of thousands of dollars.

Defense In Depth

Marcus and Cole agree that SMEs also don't always have the IT staff to notice botnet activity on their networks, so there is a greater potential for the bots to become firmly established. Cole also recommends that organizations should notify their ISPs of any potentially malicious activity. For their part, ISPs should perform both ingress and egress filtering to block known bot traffic, Cole notes. ISPs should also filter out potentially malicious email attachments, he adds.

Ferguson advises that SMEs should have a defense in-depth strategy throughout their networks, "Stay on top of OS and application vulnerabilities and patch, patch, patch," Ferguson says. He suggests that Windows (www.microsoft.com) users set their OSes to automatically update. Ferguson recommends using Secunia Software Inspector (secunia .com) to find third-party software that may be at risk of being exploited.

"We have seen variants of malware morph itself at a rate that makes it difficult for antivirus signatures to keep up," DiMino says. "In many cases, detection and defense must be used together," He adds that outbound network traffic should conform to a firewall egress plan, and IDS should be used throughout the network. DiMino and Cole agree that end users should be trained not to open unexpected attachments.

Defense in-depth with savvy security management practices can deny bot herders access to company computers. Only then can IT shops prevent further botnet expansion.

Who's Winning The Botnet Wars?

Gadi Evron of Beyond Security (www.beyond security.com) is a long-time botnet warrior who actively works to train others to recognize and combat botnets. "The people who lead this fight are private individuals across industries . . . volunteers who care and do," he says.

For the past three years, Evron has organized annual invitation-only ISOTF (Internet Security Operations and Intelligence Task Force) training sessions. "The ISOTF enables information sharing, global coordination, and face-to-face meetings to get things going where we haven't been able to get traction before," Evron says

When asked who is winning the battle, Evron says that for now the bad guys have the upper hand. "We need to start fighting back but cannot do so without becoming criminals ourselves." he notes.

"Law enforcement has come a long way in the past 10 years and mostly means well," he says. "They have good people working on these issues, but they are grossly understaffed and generally incapable of doing much, especially when it comes to international cases," he notes.

Dave Marcus of McAfee Avert Labs (www.mc afee.com) is a bit more upbeat. The good guys may have lost the battle for the moment," he says, "but I'm confident that we will win the war.

Every time we detect a bot or take down a

... Every time we detect a bot or take down a botnet, we make headway."

Here in the United States, police agencies have begun to respond to the threat. In June, the FBI announced the results of Operation Bot Roast, which culminated with arrests of three U.S. citizens suspected of operating botnets. The FBI identified more than 1 million computers compromised by botnet malware. It is now working with US-CERT (United States Computer Emergency Readiness Team) to notify the compromised PC owners.



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Enterprise Search

Finding The Right Search Solution To Meet the Needs Of Your SME

by Robyn Weisman

OH, NO, ANOTHER THING for you beleaguered IT administrators to worry about: finding the right enterprise search solution for your business. "Ah, jeez, I gotta buy something else, and furthermore I'm going to have to manage something else, and this is just awful. I can't believe that I'm in this world," says Gartner Research Vice President Whit Andrews, echoing the cries heard around data centers around the globe.

And the search needs of the average SME are certainly not one-size-fits-all. "If you talked five years ago about search, you would have a company that would say, 'Does your company need search? You just buy search from us," explains David Thede, president of enterprise search vendor dtSearch (www.dtsearch.com). "Now that's like saying, 'Do you need things that use electricity? Well, you can buy things that use electricity from us.' Well, it depends what you need because there are lots of things that use electricity," Thede says, chuckling.

Thede points out that the basics of enterprise search technology have not changed much over the years. dtSearch's desktop and network products, which offer a desktopbased GUI and enable users to build their

"If you employ 10,000 people and you sell 1,000 to 100,000 products from multiple suppliers with heterogeneous data sources for product descriptions, you need to be ready for the fact that your search engine is a strategic part of your business."

- Gartner's Whit Andrews

nexus of shared documents collections, have been around for quite some time. "Our first product in that market was released in 1991," says Thede. "Bells and whistles [were] added along the way, but the basic idea [in which] you type in some words, and you get a bunch of documents, and you figure out what you want, it really hasn't changed a whole lot."

Given this contradictory information, how do you choose the enterprise search solution for your needs?

Determine Your Company's Commitment

According to Andrews, IT administrators need to determine the degree of commitment their companies will bring to the quality of search results, as well as the breadth of a search application's influence. "If the IT manager thinks his or her company has little appetite for sophistication or training or multiple application development on a search platform, then he or she needs to buy something comparatively inexpensive, easy to install, and limited in flexibility," Andrews says.

Andrews says the basic questions are the same no matter what the approximate project is. At the same time, the answers will obviously vary, depending on an organization's needs. "If you sell widgets and you employ 350 people selling 50 kinds of widgets with extremely low customization and a robust paper catalog and reorder business, you don't need to spend a whole lot of money on your search engine," says Andrews. "But if you employ 10,000 people and you sell 1,000 to 100,000 products from multiple suppliers with heterogeneous data sources for product descriptions, you need to be ready for the fact that your search engine is a strategic part of your business."

Get Your Staff Involved

Thede recommends that IT administrators focus on the ways in which enterprise search fits particular situations within their

Eight Steps To Pinpoint The Right Enterprise Search Technology Vendor

Gartner analyst Whit Andrews suggests asking yourself the following eight questions when choosing from the seemingly endless number of vendors that sell enterprise search engine technology:

www.ccny.com

- 1. Do you want a hardware appliance or conventional search software?
- 2. Is finding a hosted solution the best choice for your enterprise? If not, would it be a tolerable choice or one that is completely unacceptable?
- 3. What is the likelihood that the chosen vendor will be used for future projects, as well as for this implementation?
- 4. What is your budget for an enterprise search solution, and what is its business value?
- 5. Can you identify vendors whose products you already use extensively and are happy with
- that also offer attractive enterprise search solutions?
- **6.** Have you evaluated the limitations of any OEM-style versions of search software you already use in applications? Also, have you identified what licenses for fully fledged search engines you already own?
- 7. What document repositories and business applications are you planning to address with your choice of enterprise search engine?
- 8. Have you identified the security systems with which integration is necessary and the level of sophistication required for doing so?



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companies and then choose products that meet the needs of these situations. "You will have different requirements for your legal department searching their collection of documents vs. people doing email archiving or technical people who want to be able to research data vs. [people who] might want to put something on a Web server to provide a way for customers to do searches of your documentation or product information," Thede points out.

Rather than trying to impose a top-down solution, where a small group of IT professionals decides what everyone in an organization should use, the organization is much better served when IT departments work with smaller groups and choose a solution that comes from the group that will actually be using these particular products, Thede says.

"Get lawyers involved in picking out legal research products, get whoever manages email archiving in picking that product, and so forth," says Thede. "Otherwise, it's easy to miss things that are important, and you end up with a solution that doesn't really address much of what anybody needs."

Thede goes on to explain that for a department needing email archiving, users typically need a system that automatically migrates documents out of the email live server into a durable repository for legal and regulatory purposes. And Andrews points out that a department of lawyers and legal support staff that uses search to conduct e-discovery needs a search engine that provides forensic metadata with some level of guarantee. "I can promise [them] these are the emails that are germane to [their] requests for data, and the metadata in these emails is as it was when they were created," Andrews says.

Lots Of Search Vendors, Plenty Of Options

Thede says that different levels of need exist for those employing enterprise search products. For those who need just casual searching of relatively small document collections, there are several free products that can do the job. Meanwhile, those who need more serious research of large documents or need special capabilities, such as forensics or reporting, can find a host of solutions out there that do cost money.

Andrews offers several suggestions for quality enterprise search solutions vendors.

For enterprises that need e-discoveryrelated search tools for the litigation process, Andrews recommends dtSearch, ZyLAB (www.zylab.com), X1 (www.x1 .com), ISYS Search Software (www.isyssearch.com), FAST (www.fastsearch.com), and Autonomy (www.autonomy.com).

For enterprises seeking out a broad platform search engine that can handle anything from e-discovery to electronic commerce to intranet search, Andrews recommends looking into solutions from FAST, Autonomy, Endeca (endeca.com), Oracle (www.oracle.com), and IBM (www .ibm.com).

For enterprises looking for something to handle Web site, intranet, and workgroup search, Andrews recommends IBM, Microsoft SharePoint, and Google (www .google.com), which he praises for being one of the simplest products on the market and gets some of the best results out-ofthe-box.

For enterprises needing enterprise search to support customer support and interaction hubs, Andrews recommends InQuira (www .inquira.com), Consona (www.consona .com), Talisma (www.talisma.com), and IBM, adding that IBM has a variety of products, including a free offering that targets small and midsized enterprises.

Finally, for enterprises needing video or audio enterprise search, Andrews recommends solutions from Nexidia (www.nexi dia.com) and Sonic Software (www.sonic software.com), as well as solutions from

Virtual RAID Boosts Video **Surveillance Storage**

Pivot3 Enters The Market With An IP-based RAID Platform

START-UP PIVOT3 has entered the scalable network storage market with a "virtual distributed RAID" platform, which the company says can slash storage infrastructure costs by half while improving scalability and data availability.

The RAIGE (RAID Across Independent Gigabit Ethernet) storage cluster is the first system from Pivot3 based on a block-level virtualization architecture that eliminates



the need for traditional RAID hardware and storage controllers. Data-protected storage is supported across networked nodes, called Databanks, which are built using x86-based servers connected by Gigabit Ethernet.

"This is an alternative that not only can reduce cost up to 50% but can also provide five times or more the performance of traditional storage," says Jeffrey Bell, vice president of marketing for Pivot3.

The ability for RAIGE to simply and cost-effectively handle data-intensive application workloads has made it attractive to customers within the video surveillance space. Breaking into that market is requiring Pivot3 to work within the existing partner community, a practice the company is likely to continue to use as it targets additional markets.

"Businesses considering video surveillance are looking at cameras or video management software and are working with security integrators," Bell says. "We've been working with those types of providers to get the leverage we need in the market."

The platform is well-suited for apps requiring content aggregation, including use for medical records, oil and gas exploration, and archiving. The use of standard server platforms can allow a business to create a pay-as-you-grow model, adding drives as needed without disruption.

"Data recovery times are five to 10 times faster than other storage alternatives due to system-wide parallel processing and a Pivot3-created algorithm that optimizes the rebuild process," he says. Data is continuously made available through volume provisioning changes that support on-the-fly configuration changes.

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Hidden Migration Costs

Know How To Keep Surprises In Check

by John Brandon

NO MATTER HOW HARD data admins try to avoid them, software upgrades and infrastructure changes are inevitable. In the ever-increasing complexity of the data center, with software dependencies creating a house of cards effect for most installations, application migrations can be cost-prohibitive. There's usually a planning and budgeting process for large upgrades, new software and hardware purchases, staff expenditures, and support costs. Understanding all of the variables is one of the advantages that a large company has over smaller companies because they can purchase configuration management software to track all data center changes and hire administrators to focus on change control.

Yet, one primary cause of data center downtime is those unplanned, unbudgeted migration costs—the ones that are hard to predict because they are only revealed during the migration itself. For example, in building a new customer-facing database portal for the Web, you might discover that the underlying framework depends on an older version of Java in the original installation, which itself might be dependent on an older version of IBM WebSphere (www.ibm.com). In order to perform the migration, you might need to upgrade multiple middleware layers. Add to this the fact that each software dependency might rely on home-brewed scripts and thousands of configuration management scripts, and it's easy to see how a migration can unravel and hidden costs creep into the project—one by one.

"Usually hidden costs are related to things you don't know or things you think you know," says Jean-Pierre Garbani, a vice president at Forrester Research. "Many SMB enterprises do not keep track of changes and do not keep track of versions, dependencies between applications, or between applications and data. The problem of a software migration is essentially to collect all the information about what is to be migrated, its dependencies, and the platform configuration used. Then, to verify compatibilities between this and the target migration and to create a migration plan that reflects what is to be changed-and in which order-to stay compatible with the new version."

For the most part, these migration costs can be tightly controlled if the application framework itself is managed thoroughly, either by tracking all changes by hand or by using control software.

Migration-Control Software

Even with a small staff of about five people or more in IT, change-control software can help admins control migration costs. For SMEs, often the goal is to use management tools that are targeted for a specific application framework, such as WebSphere. Instead of managing every aspect of the data center, which might be costly for smaller companies, admins can monitor and track changes for critical systems, such as accounting or the corporate Web portal.

"Any discovery tools that have a view of the network, or administration tools that show you which applications are loaded on which machines and which versions are

loaded, can help with migration." says Garbani. "Usually any asset or configuration management or solution would be the basis for a good inventory."

BMC, Opsware, and IBM Tivoli all provide change-management controls for data centers, although each one is integrated into a larger suite of operations management tools. mValent offers tools that are specifically focused on change management for application integrity and software migration. mValent Integrity offers a view of all application settings, including the obscure text files that control dependencies between applications, cache sizes, and properties—the software also lets admins control the changes and fix problems between dependencies and run asset management-style reports.

"The problem with application migration is that there are so many moving parts, so many elements to keep track of and tune, that if they get out of alignment with each other, you might not know it until someone notices a drop in performance, and then IT spends a vast amount of resources fixing the problem," says Jim Hickey, chief marketing officer at mValent. "IT ends up addressing the symptoms and the maintenance issues apart from the larger context of the single system migration."

Hickey also explains that the hidden costs of migration go beyond just the maintenance and bug-fixing that occurs when the administrators have not tracked configuration settings in applications. There are also costs in poor application performance that can strongly impact the business.

mValent estimates that the average migration for its customers can take 30 weeks of labor at a cost of \$64,000 per migration, that

Tips For Software Migration

- Budget for migration costs due to software dependencies.
- · Use targeted application control for missioncritical systems.
- Track config changes between applicationto-application and application-to-data.
- · Use software designed specifically for configuration management. (See the "Migration Software Control" sidebar for a list of configuration management software vendors.)
- Use the built-in config management tools in Opsware, IBM Tivoli, and BMC.

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their customers plan about 10 major migration projects per year, and the total cost for all migration projects per company in terms of the headcount and costs involved with the project is about \$500,000 to \$800,000.

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WHAT'S HAPPENING

Company Takes On SAN

Pivot3 Introduces New RAIGE Architecture

by Don Reisinger

FOUNDED IN 2003 with its first product released just a few months ago, Pivot3 (www.pivot3.com) is new to the highly competitive world of technology and IT infrastructure. But just because it's young, there is no reason to suspect the company isn't capable of competing with the larger corporations. After all, if its recent product release is any indication of the future, data center managers may want to put this company on their maps.

Diving In

As Jeffrey Bell, Pivot3 vice president of marketing, notes, "Pivot3 is the inventor of RAIGE (RAID Across Independent Gigabit Ethernet)—a block-level virtualization architecture that reduces storage infrastructure costs by up to 50%." And while RAIGE is the company's current springboard for the future, "it's a highly scalable, fault-tolerant, IP SAN storage system that delivers up to five times the throughput at half the cost of other modular, high-availability storage systems."

But SAN storage isn't the only thing Pivot3 focuses on. Built on the RAIGE architecture, the company is currently targeting the requirements of modern video surveillance applications with its as-yet unreleased high-definition storage system. The storage system will store surveillance high-definition recordings, and the company hopes it will perform better than the competition through its unique scalability that can be managed by security staff without the need for too much IT involvement.

As with any new company, competing in a market can be dangerous and costly. But for Pivot3, this risk is reduced somewhat by its focus on video security storage and, in particular, scalable, high-volume implementations with the requirement for secure data capture and assured availability. Interestingly enough, the company is especially interested in competing in a variety of markets, including municipal police departments, transportation authorities, casino gaming, defense, and energy producers.

As Bell points out, "storage can represent 40 to 50% of the overall cost of a large video deployment." But with the help of Pivot3, Bell claims that IT managers can expect to reduce that storage expense "by as much as 50%."

Moving Forward

Starting a new company is difficult, and once the first product is out, the hope is that it will "stick" and customers will continue to purchase future products. And by realizing that the future can hold a slew of inconsistencies and possible issues, Pivot3 is keenly aware that it needs to stay ahead of the competition and continue to develop products that are beneficial to both the company and the IT manager.

For this reason, the company plans to extend the scalability, performance, availability, and ease-of-use of the Pivot3 storage product. Besides that, it intends to deliver storage clusters of a petabyte or more in the short term. Another high priority for the company is its "continued and expanded testing, validation, and optimization with video management applications and video capture equipment."

In essence, Pivot3 is trying to continue its momentum and solidify itself as a strong player in the storage and video surveillance market. In doing so, it's trying to create products that its customers are looking for.

Pure product enhancement will not cement Pivot3 as the dominant player in its industry. Instead, the company needs a host of competitive advantages that will attract IT man-



agers and help it maintain its footing. And as Bell explains, the company's future looks bright because it plans on maintaining its "high-definition storage, optimized for video surveillance, that will continue to hold twice the storage and up to five times the streaming bandwidth at half the cost of traditional modular high-availability storage systems."

Besides that, the company's storage will continue to be "built using industry-standard, high-quality servers and disk drives connected via Gigabit Ethernet. The virtual data allocation and protection architecture (RAID Across Independent Gigabit Ethernet or RAIGE) delivers scalable performance and data availability features typically found in systems up to twice the price or more."

Looking Ahead

If one were to examine Pivot3 and decide which element of its future strategy it intends

to maintain, the answer would be quite simple: cost effectiveness with as much storage as possible. Pivot3 is keenly aware that IT managers are constantly looking for ways to reduce costs while maintaining data centers that are capable of handling the daily workload required of the company. Sometimes this can be done with little or no effort on the part of the IT manager, while other times it's more difficult as storage needs and cost reduction influences are creating an issue.

But as Bell explains, Pivot3 will be capable of appealing to both of those forces going forward: "The Pivot3 system is designed to provide the highly available scalable capacity and bandwidth required by large video deployments at a price that can be justified."

Going forward, Pivot3 is attempting to achieve four main goals that it hopes will benefit every stakeholder in the company. First off, the company's RAIGE system will reduce surveillance deployment costs by allowing for no up-front costs and a feebased structure that grows as the user grows. Next, the RAIGE system supports up to five times more data streams that will provide direct parallel data access with no bottlenecks.

Pivot3 looks to be one of the most promising start-ups going into the next five to 10 years. With a well-regarded video surveillance storage system based on its RAIGE architecture, the company is looking to make a splash in a market that isn't too easy to break in to. But with a viable cost-reduction policy and the ability for IT managers to store immense amounts of data, high-definition surveillance may become more ubiquitous going forward.

"The Pivot3 RAIGE architecture has many market potentials beyond the initial market focus of video surveillance," Bell says. "As Pivot3 achieves success in surveillance, adjacent markets requiring scalable, highly available, access-intensive storage will be opened."

THREE QUESTIONS

Geist Focuses On Customers

Made-To-Order Manufacturing, Customer Focus Combine

by Will Kelly

As POWER AND COOLING DEMANDS in IT equipment continue to increase, it is imperative that SMEs focus on total cost of ownership for IT equipment. Geist Manufacturing (www.geistmfg.com) offers a full line of units with built-in power and environmental monitoring. These features not only help alert SMEs to potential problems with power consumption or temperature conditions but can also help discover and document potential energy savings. We spoke with Brad Wilson, Geist Manufacturing's chief technical director, about the company, its offerings, and the IT issues he sees facing today's SME.

■ What are the biggest IT-related issues facing today's small to midsized enterprise?

IT equipment continues to push upward in both power consumption and cooling demand, and according to Wilson, "For

most SMEs, understanding where and when this power is being consumed and reacting to the associated increase in heat loads can be a daunting task."

"These increased demands can not only tax the power distribution within the SME's facility but can also add significantly to the heat load that must be handled by the cooling system. The added costs associated with the increased loads must be considered for budgeting, planning, and billing purposes," notes Wilson.

He further states, "Finding creative ways to monitor these increases in consumption isn't always second nature for SMEs. That's where Geist can help. Geist offers a myriad of solutions that allow for remote monitoring of power consumption, environmental conditions, or both within the same units." By incorporating environmental monitoring together with power monitoring, a single Ethernet connection can serve to monitor both the power consumption and other conditions affecting the operation of sensitive IT equipment. Prompt notification upon breach of power, temperature, or humidity thresholds can literally save the life of the equipment and help prevent downtime within the IT system.

■ What should *Processor* readers know about your company's products?

"Geist Manufacturing is a U.S.-based, just-in-time manufacturer. All of our products are made to order, allowing the customer to impart custom features to the offering and still receive prompt service," according to Wilson.

He also wants readers to know, "Most orders are shipped from our factory within three to five days ARO [after receipt of order].

This applies not only to basic power distribution units but also to our top-end IP-based monitoring products."

Geist also offers further customization options for its customers. By reacting to what its customers want instead of giving them what the company thinks they need, Geist constantly creates new and innovative products based on actual customer demand. The entire line of IP-based environmental and power monitoring power strips has been in reaction to customer demands. Geist's once basic offering of 15- and 20-amp power strips is now pushing the envelope of power strip design, with offerings in the 60- and 80-amp range in both single- and three-phase applications.

Besides a dedicated staff of product design and development engineers, Geist also offers excellent customer service throughout the sales cycle. The company has a dedicated staff of customer service personnel who will answer your questions, specify the correct product for your application, and walk you through the ordering process. Geist also employs a staff of field managers that can help specify products with direct calls or visits with your IT departments for the ultimate in customer service.

■ What makes your company unique?

Wilson spells out Geist's uniqueness as follows: "Geist makes what you want, when you want it. We have the broadest selection in the industry, with the most customization possible." Geist also has dedicated sales and service staff and innovative engineering staff dedicated to reacting to customer demands.

"We are constantly striving to become the best supplier you've ever worked with," says Wilson.





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